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Original Papers.

THE SURGICAL TREATMENT OF CERTAIN CONVULSIVE AND PSYCHICAL DISORDERS.*

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INTRODUCTION.

Sufficient time having elapsed since a number of quasi-empirical operations were performed in certain cases of convulsive and psychical disorder, a few are here reported, together with some remarks and deductions.

In classifying cases of this kind it is so difficult to trace the direct relation between progress and operation, and also to keep in touch with the individuals concerned, that a great many cases have to be omitted as inconclusive. Those described are fairly representative as to pathology.

Statistically, of 51 such apparently hopeless cases operated upon in Los Angeles prior to 1922, the patients in 17 cases were apparently cured; of these 13 are still under observation and well at the time of writing (January, 1927).

Fourteen were 'improved,' and of these five were greatly better, while one died, after five years of great improvement, with a 'stroke.' In this case there was a dense traumatic arachnitis due to a fall five years before operation, and treated through a left parietal osteoplastic flap, June, 1921.

Three deaths were directly attributable to operation; one patient, an alcoholic of 43 with arachnitis, died on the day after operation, of cerebral hæmorrhage, and two infants with gross external hydrocephalus died on the day of operation from too sudden release of the fluid. Four cases of severe grade progressed to deterioration, after immunity varying from three months to eighteen months after operation. Thirteen others remained unchanged after operation, being neither better nor worse.

*Revision to date of a Paper read before the American Medical Association, June, 1923.

None of the 'cures' received medication after operation, to my knowledge, unless so stated; and all the cases herein described, cured or otherwise, were free from clinical and serological signs of syphilis, except where it is stated to the contrary.

CASE HISTORIES.

CASE 1. *Occult Internal Hydrocephalus (intermittent).* H. L. S., female, married, age 34 when first seen by me on July 12, 1913, was then under the care of Dr. Alfred Fellows and Dr. H. G. Brainerd, who had treated her with large doses of potassium iodide.

She had suffered from headache and opisthotonic fits, with drawing up of the arms, since the age of two years. Usually there was unconsciousness, but sometimes this was only partial. The right arm was chiefly affected in the fits, and the right fingers were numb in the intervals. Vomiting, diplopia, and papilledema developed, and she rapidly became emaciated and exhausted. On July 12, 1913, I performed a right subtemporal decompression and found very great intracerebral pressure. This soon subsided, the sight returned, and she has been in good health since. There have been no more fits.

This case was reported in detail in the *California State Journal*, November, 1914.

*CASE 2. *Occult External Hydrocephalus.* E. P., female, age 13, was sent to me by Drs. John Ferbert and William Molony. She is right-handed.

Patient was healthy until she suffered from a severe fever at the age of 18 months, during which she had a tonic fit with unconsciousness lasting one hour. These fits recurred every three months, with a superadded clonic element, until in July, 1917, she was having twenty or more such fits per night, with permanent right hemiplegia, speechlessness, and apparent imbecility. Spinal fluid, examined on November 6, 1917, was normal in all respects.

November 1917. Left Rolandic osteoplastic flap revealed much external hydrocephalus, both subdural and subarachnoid. Dural flap was left unstitched and bone-scalp flap replaced.

Result: The fits ceased entirely after 36 hours. The hemiplegia and aphasia rapidly cleared up and there have been no further symptoms to date, except that during 1924 the patient had occasional bilateral myoclonus without affection of consciousness, which ceased under small doses of luminal. Mentally and physically she appears normal, and takes no medicines.

This case was reported in *International Clinics*, Vol. 3, series 28.

CASE 3. *Occult External Hydrocephalus.* L. H., female, age 15, was sent to me by Dr. J. Lee Hagadorn. Right-handed. Heredity excellent.

The patient was healthy until she had whooping cough, June, 1916; a tonsillectomy of acutely inflamed tonsils was performed in January, 1917. Immediately after the operation she would cry out nightly in sleep, and this was followed within two months by flexor spasm of the right hand during the day, without affection of consciousness. Two weeks later it was discovered that she was having nocturnal attacks of tonic emprosthotonus followed by clonus of the right arm, head and eyes moving rhythmically to the right, associated with alteration of consciousness for a varying period after relaxation. For the next 18 months she had from five to 20 such attacks every night. There was headache, nausea, constipation, and nose-bleeding. On October 18, 1918, she remained in a state of coma with cyanosis for over an hour. Spinal fluid normal in all respects.

*See further in Addendum at end of this paper.

After consultation with Dr. J. H. Utley and Dr. William A. Edwards, I turned down a left osteoplastic flap over the Rolandic area on October 24, 1918, revealing a marked excess of subdural and subarachnoid fluid over a healthy cortex. The dura was left unstitched and flap replaced.

Result : The tonic element of the fits persisted, but the clonic element soon after became left-sided, for the first time. The right arm was now extended above the head instead of abducted as formerly during the tonic phase (Fig. 1).

December 4, 1918. Right Rolandic osteoplastic flap performed in the same way above a right subtemporal decompression made on November 1 ; and a bi-flanged gold tube inserted to make communication between the subcutaneous and the subarachnoid spaces, on December 7, in the region behind and above the right mastoid.

Fig. 1
Case 3. Attitude in basal fit.

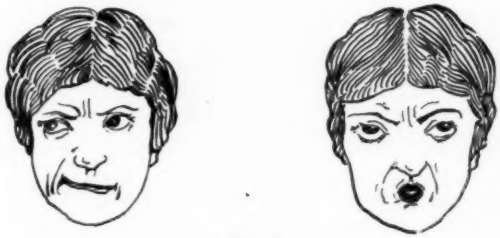

Fig. 2
Case 3. Facies in cortical fit. Facies in basal fit.

Result : The clonic element of the fits disappeared altogether, but the tonic emprosthotonus persisted. During the tonic fits the mouth was evenly puckered, the eyeballs upturned, and the eyelids flickered (Fig. 2). It was now observed that, although consciousness was instantly lost at the onset of these tonic fits, orientation was perfect immediately after relaxation. This was in marked contrasts to the hebetude and aphasia which used to follow the cortical clonic fits. At each operation the brain expanded after the fluid had drained off.

December 20, 1918. Bilateral suboccipital deduralization revealed subacute arachnoiditis of the cisterna magna and was followed by complete and immediate cessation of the remaining tonic fits. (The occipital sinus was not divided.) The patient has enjoyed perfect health up to the present time (January, 1927). She is exceptionally bright in mind and is well grown.

The etiology of this case is clear. A septic process from the tonsils via, perhaps, the ascending pharyngeal artery, caused the unosmotic state of the basal membranes, which in turn caused the external hydrocephalus. She had for long been condemned to deteriorating drugs, as a case of 'epilepsy,' before operation.

This case was reported in greater detail in the *British Medical Journal*, July 16, 1921.

CASE 4.—*Multiple Arachnoid Cysts.* D. D., male, right-handed, age 34, when sent by Dr. J. Lee Hagadorn.

The patient had scarlet fever at the age of 12. When 14 years old he jumped from a shed, four feet above the ground, on to his feet. He at once felt nauseated and queer in the head. That night he had his first fits, 16 in succession. The fits commenced in the right leg, spread upwards, and terminated in tonic opisthotonus. Consciousness was retained until the onset of the tonic opisthotonus. For a while he had six fits every night and thereafter one per night for twenty years. Many fits were followed by maniacal attacks and some were aborted by constricting the leg. An *X*-ray photograph showed a faint shadow in the left Rolandic region, but the bone (inner table) was normal. On the right, a Babinski response was obtained.

October, 1920. Left Rolandic osteoplastic flap revealed opaque yellow and white arachnoid with many cysts over this area, chiefly in its upper part near the sagittal sinus. As much as possible of the thickening and the cysts was dissected off and the bone-flap replaced.

Result: No fits for nine months after the second post-operative day. Then he had a few slight attacks during one week following heat prostration. These spontaneously ceased and he was perfectly well, without medicine, for the next three years, after which he was lost sight of. His mentality became excellent. Dr. Isaac Jones investigated the vestibular functions in 1924 and found them normal; the turning and douching had no tendency to induce a fit, as has occurred in some cases.

CASE 5.—*Pathology Obscure.* N. G., female, married, age 26; right-handed. Father died of T.B.; an aunt died of pernicious anæmia with glandular disorder.

Poliomyelitis at two years had caused atrophy of the right shoulder girdle, and slightly of the left. The knee jerks have remained absent. The patient menstruated normally at 14 and was otherwise in perfect health until an attack of typhoid a year later. During convalescence she commenced myoclonic jerking of hands at intervals, and soon had an attack of sudden unconsciousness, with tonic rigidity and slight opisthotonus and a bitten tongue. There was never any clonic movement in the attacks. The bowels required nightly laxative ever since the typhoid, until after the operation, November, 1920.

After the first attack the myoclonic jerking continued, being worse at night, and one year later the second attack with unconsciousness occurred. The attacks became more frequent and between them the myoclonic jerkings also increased. There was marked tremor of the hands and the muscles of the neck at all times.

Bromides had a beneficial effect, but were discontinued after three years. For some months before I first saw her, in March, 1920, the myoclonus was so persistent as scarcely to allow any sleep; the attacks of decerebrate rigidity with sudden total unconsciousness, wide open mouth followed by slow tonic closure, risus sardonicus, and flickering eyelids, succeeded by cyanosis and stertor, were averaging one in every two weeks. Each attack was followed by transitory internal strabismus, and widening of the right palpebral fissure and right pupil, with ecchymosis of neck, face, and shoulders. Widening of both palpebral fissures and pupils preceded attacks. In the intervals, the right pupil was the smaller. Just before attacks, the hands were cold and the pulse infrequent and thready: after attacks the hands were warm and the pulse soft and frequent. General shivering also followed them.

Searching analysis failed to reveal any trace of hysteria. The patient was and is highly intelligent and socially popular.

The appendix had been removed and a part of the left ovary resected by Dr. Howard Andrews of Hollywood. Later she was curetted and had the tonsils removed by Dr. F. L. Anton, all without effect. Also glandular and other therapy was without avail; so that, rather than take increasing doses of bromide for the rest of her life, she decided to try operation.

November, 1920. Subtemporal, followed by bilateral suboccipital deduralization revealed perfectly healthy membranes, excessive subdural and subarachnoid fluid not under pressure, and very pale cerebrum and cerebellum, with strikingly constricted arteries. (The occipital sinus was not divided.)

Result: The marked tremor of the hands and neck disappeared almost at once and has never recurred. The attacks gradually diminished in frequency so that there were only two light ones in 1922, and one more during the succeeding four years. Rarely she experiences a slight myoclonic shock on the point of dropping off to sleep. She sleeps very well and requires no laxatives. She took 10 grains of mixed bromides four nights a week up to December, 1923, and has required none since. I attribute much benefit to the use of iodine as a vaginal douche after the periods, at which time the myoclonus and proneness to attacks used to be greatest. A liberal meat diet is allowed. The subtemporal window used to bulge before attacks and collapse afterwards, which is the rule with most cases, but is occasionally reversed in others.

This patient was married in 1922 and leads an active life. Her memory and alertness have been completely restored.

I do not give the operations entire credit in this case, but think their main value was in improving the circulation of the brain and allowing the fluctuation in volume which is necessary in circulatory disorders of the brain. I think that menstruation acts unfavourably in such cases by depletion of circulation and ovarian hormones, as well as by fatiguing the midbrain.

There was also a toxic factor, but in such cases it is difficult to determine whether it is primary or secondary. Alcohol was the most effectual means of immediately preventing attacks, in this case, before operation.

CASE 6.—*Arachnoiditis and Cyst-formation.* L. L., male, age 20, right-handed.

At the age of 10 years, during whooping cough, he had an attack of prolonged coma. Attacks of dazedness or of unconsciousness recurred every 20 days for four months, when he had a typical grand mal fit, with opisthotonus and clonus, preceded by blinking and 'nodding' and jerking of the right shoulder. During the first year of fits he had headache and vomiting.

These fits recurred every 16 days thereafter, and he had three on the day I first saw him, in May, 1920. He then gave a right Babinski plantar reflex; the nasal margins of the optic discs were hazy; and *X*-ray showed a very small and enclosed sella turcica. Intelligence was good, but the patient was rather sleepy. He had not grown an inch since the whooping cough, four years before. The fits could often be prevented by a small dose of whisky when the 'nodding' began. Pituitary extract had no effect.

His physical signs were very variable, being sometimes present between the fits, sometimes absent. These variable signs were a paretic right face (Fig. 3), an exaggerated right knee-jerk, a right Babinski toe reflex, rarely bilateral; sometimes there was decided Rombergism and ataxy of the right arm and occasionally headache and nausea. The nasal margins of the optic discs were blurred and the left retinal veins markedly enlarged. In the fits, the head and eyes sometimes went to the left, sometimes to the right, and sometimes back and up.

Fig. 3
Case 6. Note asymmetry of face.

Dr. Isaac Jones examined the vestibular apparatus and found markedly impaired vestibular responses. The turning and caloric tests showed subnormal nystagmus, vertigo, past-pointing, and all constitutional responses. No pallor, sweat, or nausea was produced except very slightly at the end of prolonged douching of the left ear. There was no spontaneous nystagmus or past-pointing, or vertigo; no perverted nystagmus, no incoordination of ocular movement, no suggestion of conjugate deviation after ear stimulation.

In sharp contrast to this vestibular defect, the hearing was unusually acute in each ear. Dr. Jones regarded the defect as being within the brain-stem. (This examination was made in April, 1922, one year after the suboccipital operation.)

The surgical treatment had been as follows: Subtemporal deduralization in December, 1920, and suboccipital deduralization, May, 1921, at California Hospital, revealed marked intracerebral pressure, a localized cyst over the right cerebellum, and thickened and opaque arachnoid over the medulla and vermis. (The occipital sinus was divided.)

Result: Sudden increase of height of one foot in less than a year. Fits gradually diminished and finally ceased in November, 1922. The former marked coldness of the extremities has quite disappeared. He is now a strapping lad of about six feet, and intelligent. Three-quarters of a grain of phenobarbital nightly were allowed for a year after operation. No drugs had any appreciable effect before operation. Among those tried were bromides, luminal, borax, œnanthe crotata, pituitary gland, etc.

CASE 7.—*Occult Internal Hydrocephalus.* D. T., female, age 21, left-handed; sent to me by Dr. F. L. Anton.

Patient was in perfect health until tonsils removed in 1917, by an osteopath. Fits began three weeks later. They were typical grand mal fits, the head and eyes usually going to the left. For one year before operation she averaged 12 major attacks per month, with petit mal in the interval, medication notwithstanding. After attacks, the left palpebral fissure was widened.

November, 1920. Left subtemporal deduralization at California Hospital revealed much yellowish subdural fluid and intracerebral pressure. Subsequently, bilateral suboccipital operation, in February, 1921, and later a right osteoplastic flap operation, leaving the dura unstitched, were performed.

Result: The fits rapidly diminished in frequency and severity, so that during the period 1922–1924 she was free for seven months at a time.

Unfortunately, in July, 1925, she had a severe emotional shock, since when the attacks have been rather more frequent, varying from one to two months to one per month. She continues in her occupation, which she commenced in 1922, since such fits as she has are very much lighter. She married in October, 1926. She has not thought the present attacks of sufficient importance to try the effect of any medicines whatever, although I have advised medication.

This case is inserted on account of the relation between tonsillectomy and convulsions, when the tonsils were acutely inflamed at the time of operation. In this respect it is parallel to Case 3 of this series.

CASE 8.—*Arachnoid Cysts of Left Frontal Lobe.* J. W., born 1886, right-handed, was sent to me by Dr. G. P. Waller of Los Angeles.

Developed grand mal fits immediately after scarlet fever at the age of six years. The fits spontaneously ceased one year later, after which he became an incorrigible boy, although apparently very intelligent.

For years past he had been in constant trouble on account of various crimes and had spent a large part of his time in San Quentin prison on account of forgery and polygamy. He was released from San Quentin for military purposes and went to France, but in spite of a good position deserted from France to England. On his return to California he again committed bigamy and forged a cheque against his own family. He was brought to me on February 6, 1921. He told me, with apparent candour and truth, that he committed the offences in a twilight state. He knew he was doing wrong, but acted as though in a dream.

The first abnormality discernible was a marked asymmetry of the face, so that there was a lack of expression on the right side. The tongue protruded slightly to the right; the right mouth was weaker, both at rest and on voluntary effort.

Fig. 4
Case 8. J.W. Photograph taken the day before operation. Note right facial weakness.

Fig. 5
Case 8. J.W. About one month after operation.

Emotional effort was not recorded. The right knee-jerk was brisker than the left and there was a slight clonus of the right ankle. The right plantar reflex was variable, the left absent. Pointing was better with the left hand and there was some loss of position sense on the right side. Bone conduction was poor in the right ear. The nasal margins of the discs were hazy and that of the right contracted. The right pupil was larger and reacted better to light.

Operation, February 10, 1921, at California Hospital, Los Angeles. Osteoplastic flap turned down over the upper and mid-frontal lobes. On opening dura, a bluish, transparent arachnoid cyst the size of a pigeon's egg presented over the superior frontal gyrus, with much surrounding œdema. On further reflection of the dura, another similar cyst was discovered at the lower posterior angle of the mid-frontal gyrus. The vessels were covered with thickened, white, opaque arachnoid, and some sulci that should have held vessels had only thickened pia-arachnoid visible.

The cysts were opened and the dura left unstitched. Bone-scalp flap replaced.

Result: Personality and face remarkably altered. (See Figs. 4 and 5.) For the ensuing two years he did satisfactory service as teller in two local banks. He then, by competitive examination, gained the position of private secretary to the chief of one of the largest corporations in Los Angeles, which position he still holds after four years. His original wife has returned to him. He tells me that he has never had a glimmer of a desire to return to his old ways, which seem incomprehensible to him now.

CASE 9.—*Frontal Arachnoiditis (? Syphilitic).* G. W. B., male, sent by Dr. W. B. Kern. Patient is a tall, strong man, born 1878; married, with five children, all well in 1921 (but one went into convulsions in 1923, and died in acute status).

In 1904 he fell 40 feet, striking head, and dislocated the third cervical vertebra, but he had seen military service since. For years he had had steady, dull headache of a congestive character. During 1919 and 1920 this had been supplemented by violent frontal pain, with maniacal attacks and suicidal tendencies. For this he had been confined in Norwalk Asylum under the care of Dr. Kern, who sent him to me on January 19, 1921.

He had "had a good bit of alcohol" in his time and the Wassermann test in the serum was 2 plus. However, the asylum treatment had little effect on the headaches, and the mind was rapidly deteriorating. It seemed highly probable that he would commit suicide at the first opportunity.

Physical signs were as follows: Double papillœdema of low grade. Marked ataxy of right hand; less marked left. Marked Romberg's sign, the patient falling backward. Pupils equal and normal, reacting to light and accommodation. Movements of right side of mouth slightly stronger than left.

Operation at the White Memorial Hospital, April 1921. Left osteoplastic frontal and prefrontal flap in two stages. Much subdural fluid; moderate streaky arachnoiditis. Dura left unstitched and flap replaced.

Result: Complete freedom from pain up to the present time (January, 1927), in spite of no antisyphilitic treatment. Patient has built up a considerable business of his own in metal ware and seems mentally normal.

CASE 10.—*Opaque Cerebral Arachnoiditis, of unknown origin.* D. B. P., male, age 28, right-handed; sent by Dr. H. C. Stinchfield.

The patient has suffered from grand mal fits since 1912. He had typhoid at the age of three, enteritis at six, whooping cough at eight. During the enteritis he was comatose for six days.

His mother had two attacks of a convulsive character, 24 years and three years prior to November, 1920; probably hysterical, as one occurred just after marriage and the other just after seeing her son in a fit. She died of apoplexy, May 1922.

The boy's attacks averaged one in six weeks, sometimes four in two weeks, but he was once free for 10 months under bromide. The fits were opisthotonic, with turning of the head and eyes to the left. Sometimes myoclonic jerks of the arms upward preceded the attacks and sometimes occurred without attacks. He had a slight and brief aura, "like going under ether." The attacks were more frequent at night and on first rising. The only physical signs of note were a contracted left disc with hazy nasal margin, marked clonus of eyelids on closure, and marked nystagmus to right and left. Blood pressure 110/60.

Operation, November 26, 1920, at the Clara Barton Hospital. A right subtemporal decompression and a right Rolandic osteoplastic flap revealed such a dense arachnoiditis that the cortex was almost completely obscured by the creamy-looking deposit. Interspersed were small arachnoid cysts and adhesions to the visceral surface of the dura, both old and fibrous, and soft and recent in appearance. These adhesions bled dark blood freely when separated. The inner aspect of the dura also was dotted with white spots. The fluid round the vessels in the sulci, where such was visible, was of a deep yellow colour.

The dura was left unstitched, the flap replaced, and the temporal muscle closed where it had been separated in the direction of its fibres. The brain was collapsed and pulsating well when the wound was closed.

Result: He had fits for about two years as frequently as before; then they gradually diminished, and at the time of writing (January, 1927), he has been quite free for over a year. His father (Dr. A. B. Pierce) tells me, however, that he is taking "one tablet of luminal a week."

Dr. Isaac Jones found by the Bárány tests that the functions of vestibular pathways within the brain-stem were markedly subnormal; cochlear function on both sides was excellent.

CASE 11.—*Post-typhoid Epilepsy (pathology uncertain).* J. H., male, age 40, left-handed; was sent by Dr. Barnes, November, 1920. Good heredity; normal birth.

At the age of two years he had bowel trouble with "spasms" for two weeks. He had perfect health after measles and whooping cough at four years, until an attack of typhoid, May 1908, after which he grew very stout. The first fit occurred in December, 1908, in his 22nd year; at noon, after work, he was found unconscious on the ground, but quickly rallied. Thereafter he had attacks every two weeks, which resembled simple fainting fits. These merged into convulsions one year later. The fits were very regular every two weeks, but bromides and various proprietary medicines reduced their frequency to one every five weeks for a time. He was never free for more than six weeks, and that only once, between December, 1908, and November, 1920, when I first saw him. The character of the fits was tonic opisthotonus, preceded by a scream and followed by cyanosis and tremor. He underwent an operation for gall-bladder affection by Dr. H. E. Southworth in 1912, which had no effect on the fits.

After each attack he had herpes of the ball of the left thumb. The optic discs were normal, as also were all other physical signs, except that the position sense and pointing of the right arm were defective; there was some Rombergism, and a fine tremor of both hands. Plantar reflexes absent. Wassermann test was negative. Occasionally the right palpebral fissure was slightly wider than the left.

Operation, January, 1921, at the French Hospital, Los Angeles, was decided upon on account of the close relation to typhoid fever, the intolerable frequency of the fits, and the complete failure of many years of medical treatment, including my own. Moreover, the mental state was becoming dangerous.

Subtemporal deduralization revealed normal amount of subdural and subarachnoid fluid, increased intracerebral pressure, and thickening of the arachnoid round the sylvian artery. Since he was left-handed, as also his father before him, the operation was done on the left side. To my astonishment, he was aphasic to the extent of complete dumbness for three days. There has been no affection of speech since. This phenomenon had never before occurred in my experience as a result of subtemporal operation.

In view of the marked general pressure and the continuance of the fits, a bilateral suboccipital deduralization was later performed. The dura on both sides presented like hard cricket balls and the tension after releasing all the fluid from the fourth ventricle remained very great. By allowing slow seepage, however, the muscles could eventually be brought together over the cerebellum without danger of herniation of the latter. The occipital sinus was not divided in this case, but the dura was left open on both sides of it.

On September 3, 1921, at the Methodist Hospital, Los Angeles, on account of continuance of fits and the continued bulging of the subtemporal window, a large right parietal osteoplastic flap was turned down and the dura left open (two-stage operation) in order to allow further room for the chronic gliosis that is one cause of continuance of fits in old-standing cases. Bone-scalp flap replaced slightly raised.

Result: Attacks continued at about the same intervals for over a year. Then he gradually improved and for the last two years has had no attacks at all. He is highly proficient in his art of scenery painting, much of his work exhibiting very fine detail which has been quite unimpaired by either his former illness or operations.

All of this he attributes, rightly or wrongly, to his having taken the "Epilepsy Cure" tablets of the Western Medical Company of Chicago. (Two other cases, outside of this series, have reported benefit from this proprietary medicine, without apparent harm.)

Dr. Isaac Jones examined the vestibular apparatus on March 27, 1922, and reported as follows:

> "Neuro-otological examination shows definite vestibular impairment, bilateral. This is demonstrated by both turning and caloric tests. There are certain peculiarities about this impairment:
>
> (1) The caloric test of each ear shows a disproportion between the nystagmus, which is poor, and the pastpointing, which is good.
>
> (2) There was, after all turning and caloric tests, a striking absence of constitutional responses. Turning and douching produced no pallor, sweat, or nausea. For example, after douching the ear, although the patient would show a normal falling response, yet he would say, "I think I will go now," and acted at once as though nothing had been done to disturb him.
>
> (3) On douching each ear, there was a curious phenomenon. After 35 seconds the eyes began to twitch. (This is sooner than normal, which is usually 40 to 45 seconds.) This nystagmus, although of small amplitude, was definitely observed and the amplitude increased to a fair nystagmus after a little more than one minute of douching. Then, as the douching was continued, the nystagmus disappeared entirely, instead of increasing. This phenomenon was true of each ear.
>
> This impairment is central in type rather than peripheral, but is not suggestive of gross lesion of any kind. The cochlear portion of each 8th nerve is normal."

Incidentally, it may be here stated that this absence of constitutional response is highly characteristic of epileptics. In some cases, however, a fit is induced.

CASE 12.—*Syphilitic Meningeal Adhesions.* Mrs. F., age 53; three healthy children.

The patient had been under treatment for many years for very severe monthly attacks of migraine. The last three attacks had been accompanied by tonic spasms of the arms and hands into the Parksonian attitude, cyanosis, dilated pupils, clouded consciousness, and sense of impending death. She had latterly been attended by Dr. H. G. Brainerd.

When I was first called, in November, 1920, she had been in this tetanoid condition for about two hours, with intense headache and vomiting. As she was sinking into coma, I performed a subtemporal deduralization (right) the same night. There was great intracerebral pressure and marked subdural adhesions.

Result: She has been in excellent health since, although medical treatment for a positive Wassermann, discovered for the first time during the week in hospital after operation, was refused. She has mild migraine once in three to six months, which in no wise incapacitates her as formerly. She has had no more spasms.

It is highly probable that the pressure, the adhesions, and the migraine had a syphilitic basis and could have been cured in the beginning by appropriate medical treatment. However, I doubt if medication would have sufficed at the stage at which I first examined her.

Her photographs showed that she had, for years past, a marked widening of the right palpebral fissure, which disappeared after operation.

CASE 13.—*Occult External Hydrocephalus.* B. C., male, age 11, left-handed; sent by Dr. Leo Schroeder. Family history good.

He was in good health until he and his brother, a year younger, both contracted diphtheria, December, 1917. Each received 10,000 units of antitoxin, and my patient became delirious. Both children developed fits of great severity and frequency. Those of the patient were tonic emprosthotonus, followed by left-sided clonic jerkings, in which the head and eyes jerked to the left, and were preceded by an aura of a whistle and of a blow over the right ear. From being daily fits, they increased to 30 in the 24 hours, mostly nocturnal. He was observed in the Michael Reese Hospital in Chicago from September 17, 1918, until October 1, 1918, and a diagnosis of right-sided brain tumour was made, but no operation performed. The spinal fluid examined at this hospital was reported as follows:

Ross-Jones test	negative.
Noguchi test	negative.
Wassermann and Lange test ..	negative.
Cell count	3.

The tonsils were removed in 1919, after which he improved greatly for four months; then the fits continued with varying frequency until, in April and May, 1920, they were as many as 50 in 24 hours, and paralysis supervened.

As the paralysis became more general, the fits lessened in frequency and severity. When I first saw him in Los Angeles, on July 21, 1920 (Fig. 6), the fits were few daily, but he was quite unable to move any part of the body except the eyes, which followed the observer's movements. He was speechless and had to be fed with a tube. The limbs were limp, but the knee-jerks were exaggerated and a Babinski sign was present. The discs were rather pale and slightly œdematous and the veins rather full. There was a well-marked internal strabismus, alternating. The tongue was kept slightly protruded and saliva dribbled down the chin. The pupils were equal and reacted to light.

A subtemporal deduralization was at once performed, revealing marked excess of subdural and subarachnoid fluid. Two days later a bilateral suboccipital deduralization (with division of the occipital sinus) was performed. Again a great excess of fluid was found, but no macroscopic disease of the membranes noted.

Fig. 6
Case 13. B.C. July 21, 1920.

Fig. 7
Case 13. B.C. November 10, 1920, after operations.

Result: Smooth post-operative course. On the fifth post-operative day, he was able to draw up his legs and his arms to the shoulders by voluntary effort. On the tenth day he was able to play clumsily with toys. He had diminishing fits for about two weeks after operation and it was most evident that the paralysis diminished in spurts after each fit. I have come to regard this phenomenon as a kind of "fits of recovery," and believe it substantiates the theory that the purpose of fits is to restore adequate circulation to the brain and overcome the anoxæmia.

Speech returned gradually after two weeks, commencing with laborious framing of syllables and later with stammering, which disappeared after the first six weeks. By August 5, 1920, all fits had ceased and by November 10, 1920, he was apparently a normal boy (Fig. 7), a little backward in his lessons.

He remained normal in all respects until July, 1921, when, again in Chicago, the fits gradually recommenced and continued so that in April, 1922, he was again having 30 to 40 fits per 24 hours, chiefly nocturnal. In August, 1922, it is alleged

Fig. 8
Case 13. B.C. Onset of fit. Photograph taken in 1924.

that he passed a quantity of thick, creamy material from the bladder, and the fits again ceased thereafter and he picked up to almost normal until December 1922. Thereafter he had fits again and continued until he was brought to Los Angeles for the second time, February, 1925. At this time he was still able to walk with assistance, but was markedly ataxic and there was more spasticity than when I first saw him in 1920. He was having tonic emprosthotonic fits, followed by left-sided clonus, daily (Fig. 8).

Dr. Isaac Jones investigated the vestibular functions on February 15, 1925. His notes are as follows:

> "Turning showed distinct difference between right and left. Right showed small 23; left showed large 31.

"After three turnings, pallor, vomiting, and clonic convulsion. Douching the right ear for four minutes produced no constitutional responses whatever. Falling backward and to the right. Douching left ear produced only slight pallor and nothing more. Falling backward and to the left.

"No perverted nystagmus under any circumstances, but a definite block or interference with vestibular impulses, especially for vertigo, pallor, and nausea.

"There was impaired nystagmus after douching, but no definite block along any vestibulo-ocular pathway.

"No spontaneous nystagmus. Auditory tests impossible. Mother has never noted any ear trouble.

"Dr. T. Lyster reported the eye-grounds normal, pupils of normal size, equal and regular, and react normally to light. Facial movements lag on left, central type. Speech absent.

"Knee-jerks exaggerated, abdominal reflexes exaggerated, ankle clonus left, and double Babinski response."

In February and March I inspected the cerebellum through opening up the old incisions, and also the cerebral cortex later through an osteoplastic window. In both instances there was the same excess of fluid as in 1920, but the cortex of both cerebrum and cerebullum was much paler and 'boggier' and the whole brain appeared to have lost its 'tone' and did not expand after draining the fluid as it formerly did.

The operations were followed by only transitory improvement. His speech returned for a few weeks, but is now (January, 1927) absent, and he is in a condition of generalized diplegia, much more obviously spastic than the paralysis of 1920.

This case well illustrates the rule that in general excess of extracerebral fluid, the most highly educated hemisphere is the first to rebel. In this case the boy was left-handed and the clonus was on the left side, with head and eyes to the left. In Cases 1, 2, and 3 of this series, the patients were right-handed and the predominance of symptoms were on the right side, and the head and eyes jerked to the right.

This case was reported in *International Clinics*, Vol. 3, series 31.

CASE 14.—*Occult External Hydrocephalus.* J. H., female, age 23.

The patient had severe tonsillitis in August, 1910. The disease took the usual course, beginning with "hysteria" as it was thought, then fits developed which increased in frequency and severity.

In 1917 a surgeon in an eastern hospital turned down a left Rolandic osteoplastic flap, on account of the right-sided clonus of the fits (she was right-handed), and on account of the right facial paresis which is evident in the photograph (Fig. 9). He found nothing but abundant fluid. Unfortunately, he sewed back the dura and the fits continued, she lost her speech, and eventually became paralyzed to the extent shown in the illustration (Fig. 10), taken the day I first saw her, April, 1920. She presented extreme diplegia with incontinence. After subtemporal drainage on the right side, I turned down the old left Rolandic flap and left the dura open. There was much encysted fluid beneath the dura on the left side, and free fluid on the right.

Result: A few weeks later she was walking about, could sew and do some household duties (Fig. 11.) Her speech was slow and limited.

The tonic element of the fits persisted, so I did a bilateral suboccipital exposure in two stages (as always). As expected on account of the advanced nature of the

case, when the dura was opened there was an alarming gush of fluid, due to the arachnoid cistern having been torn to shreds by the prolonged fluid pressure, and the vermis had been compressed upwards so that the rhomboid fossa at once met the eye. Naturally, the blood pressure dropped rapidly to 40 systolic. Had not the dura been pinpricked at the first stage, the change of pressure would have been fatal, for the iter of Sylvius was also dilated. However, by rapid replacement of the muscles of the neck and accurate suturing of the skin, she was soon restored.

Result: She improved some more and gained weight. Unfortunately, the improvement was not maintained for more than 18 months, after which the family disappeared.

Fig. 9
Case 14. J.H. 1911. Soon after tonsillitis. Note paresis of right face.

In such an extreme case the improvement could hardly be expected to last, but the facts are worth recording because of their physiological interest. The case is very similar to Case 13.

The outcome seems to depend largely upon the general power of resistance of the patient. In healthy, strong children, like those of Cases 2 and 3, with well-to-do parents who could provide the best food, etc., the inflammatory process ceased after drainage. Both in Case 13 and Case 14 the patients were of poor families and anæmic, although both received unremitting care at home.

About the time the patient (Case 14) began to decline for the last time, her mother developed a bad cancer of the breast, and this must have interfered with the child's care. If the disease process continues, the arachnoid becomes completely unosmotic and the fluid continues to accumulate. In

Case 14 there was no arachnoid left to the cisterna magna, so that she was entirely dependent, for absorption in this region, upon the neck muscles. When these are marred by a transverse scar, their powers of absorption are limited.

This case was reported in *International Clinics*, Vol. 3, series 31, and is chiefly of academic interest, as showing the degree of at least temporary reclamation possible to an extreme diplegic of this etiology.

Fig. 10

Case 14. J.H. April, 1920. Diplegic and speechless.

Fig. 11

Case 14. J.H. Aug. 1921. After operation.

The next case does not belong to this series, since the patient came under treatment after January, 1922, but I have decided to include it because of the unusual developments and because the case is a companion one to Case 9 (Mr. J. W.), and both are of forensic as well as medical interest.

Case 15.—*Traumatic Dural and Arachnoid Scarring.* E. F. M., male, age 26, right-handed. He was paroled to my care by Superior Judge Edwin F. Hahn of Los Angeles in October, 1924.

Family history excellent. Father, mother, two brothers and two sisters all alive and well and in good social position.

In 1914 he was hit over the left post-parietal region by the butt of a pistol in the hands of a bandit. The blood pouring down his clothes made a great impression upon his dazed mind. He vomited and was attended by a doctor in his home. He had pain over the left post-parietal region on and off since, with severe occipital and frontal headaches about once a week.

Subsequently he committed meaningless crimes. The most noteworthy were the following: There was an automobile accident near his home in which a woman was hurt and bled profusely. He helped her to the sidewalk and the sight of blood sickened him. He then went home and took a pistol belonging to an official who roomed with him, went out of doors, and concealed himself in the back of an automobile belonging to his own barber. When the barber got into the driver's seat,

the patient ordered him to throw up his hands. The barber shouted for help and the patient handed him the gun, by which he was himself held prisoner until the police arrived. For this he was confined in San Quentin prison for 17 months. He had previously been arrested for impersonating a naval officer. The crime for which he was held when Judge Hahn paroled him for treatment was that of stealing cheques, which he kept for a week in his car, so they could not have been cashed.

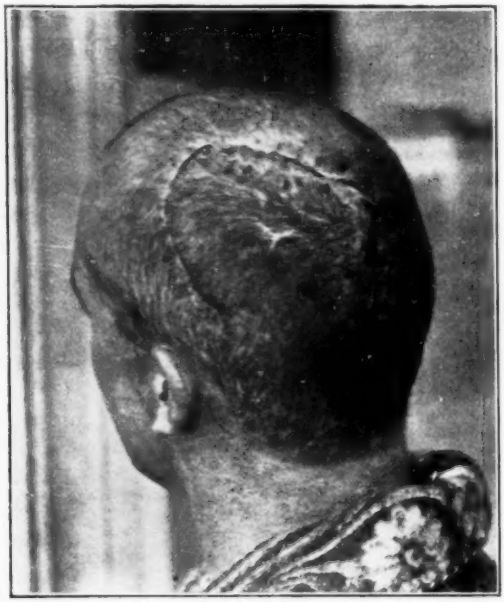

Fig. 12
Case 15. E.F.M. Showing operation scar and also the angular scar of the old assault wound in centre of flap.

On examination: Optic discs and vessels normal. Fine lateral nystagmus, best seen to the right. Pupils equal and normal in reaction. Slight Romberg's sign. Finger-nose test good on both sides. Later, the Romberg sign became more marked. Knee-jerks equal and rather exaggerated. Plantars sluggish flexor. Position sense of right arm with eyes shut markedly impaired. Right grip 90, left 115, by repeated dynamometer tests. There was a large angular scar of the scalp over the left angular and supramarginal gyri, very tender on deep pressure. He was always in a somewhat euphoric state, as if he had had alcohol, which was impossible under the circumstances. B.P. 132/90.

Operation, October, 1924, at the Methodist Hospital, Los Angeles. A left post-parietal osteoplastic flap turned down, revealing a dense scar upon the dura mater underlying the scalp wound. The dura was opened a week later and a further

white, opaque thickening was found upon the arachnoid. This was incised and raised, but not removed, and the dura replaced without stitching. Bone-scalp flap replaced (Fig. 12). Recovery uneventful.

Result: It was at once observed that the euphoria had disappeared, and the patient became more serious-minded. He has been free from headaches and in steady employment with the Bent Concrete Pipe Company of Los Angeles since.

Mr. Bent reports at present that the patient is steady and reliable in every way, which is suggestive in view of the fact that it is two years and three months since operation. Mr. Bent was responsible for enlisting the interest of the Court in the medical possibilities of this case.

The next case is reported on account of the unexpected relation between the heredity of the patient and the result of operation.

CASE 16.—*Generalized Arachnoiditis.* F. W., male, age 34, right-handed. His father (a New York policeman) died of alcoholism and drank before patient was born. A paternal aunt had epilepsy. His maternal grandmother's cousin had epilepsy.

At the age of seven months the patient started twitchings and nightmares, but after a fall on the head at the age of three years, which left a scar in the left fronto-parietal region, the attacks became worse. They varied from tonic opisthotonus with coma, to Jacksonian attacks of the right leg which spread upwards but often were unaccompanied by unconsciousness. He had these nearly every night all his life up to the time I first saw him, in November, 1921, and during my observation of him at first he sometimes had 30 or more severe Jacksonian convulsions per night. They were always mostly nocturnal. He had an aura of distress in the stomach. Sometimes he remained in status for 48 hours. He is fairly intelligent, though not up to the average.

Headaches only occurred after the fits as a rule. On examination the blood and spinal Wassermann tests were negative.

The eyes were reported on by Dr. Lloyd Mills as follows (December 12, 1921):

(1) Lack of normal amplitude of reaction of accommodation.

(2) Slight reddening and nasal blur of both discs, more in the left, where there is also a slight venous fullness and tortuosity which is lacking in the right fundus.

No spontaneous nystagmus or pastpointing. The knee-jerks were exaggerated, more on the right. Plantars, left flexor, right indefinite. Marked Romberg's sign; falls to left and back. Finger-nose test good on both sides. The vestibular pathways, examined by Dr. Isaac Jones, were reported to be "open," but some impairment of the vestibular end-organs, especially left, and impairment of both cochleas. Chronic otitis media both sides. He had normal responses to turning, but impaired responses to douching.

I witnessed many of this patient's attacks. In the Jacksonian fits, the face at first became very pale, and later very red and congested, and the exertion looked tremendous. In most fits there was clonic jerking of the head and eyes to the right, but even in these he retained consciousness very often, and could evidently understand what was said to him. They usually began with tonic straightening of the right leg. When coma supervened he became cyanotic. Drugs such as bromide, luminal, borax, etc., in reasonable doses were unavailing.

Operation December 1921. A right subtemporal decompression revealed much intracerebral pressure, and diffuse arachnoiditis round the vessels. A left fronto-parietal osteoplastic flap revealed more marked arachnoiditis especially just above the Sylvian point, but beyond this and the pressure no gross pathological change was found.

Result: The fits gradually widened apart, occurring weekly, then monthly, and during the past year he has only had one attack. He has taken 30 grains of mixed bromides per night.

This result cannot be attributed to the bromide, since every kind of medication including much larger doses of bromide had failed before operation. Moreover every kind of hygienic and dietetic measure had been tried. In 1917 he was in the Mayo Clinic at Rochester, and his mother was specificially informed when he left that his case was hopeless.

DISCUSSION.

The foregoing clear-cut cases, all but two being still under observation, are sufficient upon which to base some theoretical deductions. Of the remaining cases, which I might quote, many are difficult to get in personal touch with; in others, a detailed recital would be inconclusive or repetitive.

Cases of convulsions due to tumour, or to acute injury, or to obvious hæmorrhage, some of which have been already reported in this JOURNAL (May, 1925), are omitted as being confusing to the issues, even though equally pertinent to the theories which follow.

In regard to cases of acute injuries, both in adults and in infants injured by forceps, who have developed frequent convulsions, sometimes within a few hours, sometimes after the lapse of weeks, treatment by opening the dura and draining the excess of clear fluid by leaving it open has resulted in prompt and permanent cure. Prompt and complete first intention healing of the scalp is, of course, essential.

Let me state, at the outset, my belief in the following views:—

(1) That all fits are due to anoxæmia of some portion of the cerebrospinal axis. If the anoxæmia is complete and absolute, so as to cause paralysis, as in embolism, no fit would be expected to ensue.

(2) That the purpose of fits is to correct this anoxæmia before permanent damage occurs to the neurones.

(3) That in the so-called 'epileptic' self-limiting fit, the fit due to external hydrocephalus, or to vertical meningitis which partially occludes the arterioles, or to intracerebral pressure, or to emotion, etc.—there is a diminution of arterial blood-flow through the cerebral arterioles and capillaries, and that this is probably the chief cause of the anoxæmia. The more gradual the onset and the more incomplete the anæmia, the more likely are convulsions to ensue. The more complete the paralysis, the less the convulsions.

(4) That in the continuous or rapidly repeated convulsions of acute toxæmia, such as follows the drinking of American 'moonshine' and used often to follow the administration of salvarsan, as well as the acute intestinal disorders of infancy, the anoxæmia is due to chemical displacement of oxygen rather than to arteriospasm, and the fits continue into status in spite of the most intense dilatation of the cerebral arterioles.

I have seen these different conditions of the cerebral vessels by direct inspection of the cortex, as well as by inspection of the retinal vessels just before and during a fit. I was myself responsible in one case, 13 years ago, for exposing the cortex in a case of delayed salvarsan poisoning, on account of erroneous diagnosis of cerebral gumma, and found the cerebral arterioles and capillaries intensely engorged. I had not learned at that time that acute toxic fits are Jacksonian. Other similar cases that I have had the same opportunity to see were exposed through a similar error by others. The appearance in the above instance was in marked contrast to the cases reported in this paper, in most of which the arteries were markedly constricted and the veins full.

The crux of the problem seems to be this: What is the cause of the diminished arterial flow in the self-limiting fits?

It would seem that in some cases the vice arises in the vasomotor centres; in others, the arterioles are locally affected, and again in others the assault upon the vasomotor centre comes from elsewhere.

Considering the case of L. H. (Case 3 of this series), which is not only the most typical of the External Hydrocephalus group, but also the best studied, clinically and surgically, reference to the original report (*British Medical Journal*, July 16, 1921) reveals that each operation carried its physiological lesson.

Her grand mal attacks, before any operation, consisted of (1) tonic emprosthotonus, in which she remained rigidly anteflexed and silent for about 20 seconds; then (2), as the trunk relaxed, the head and eyes commenced to jerk clonically to the right and the right hand entered into clonus. Then (3), the movements became slower and ceased and she wept as if frightened, was disoriented, made movements of defence, and was aphasic; and then slept for a variable period until the next fit commenced in the same way.

Now, quite apart from other evidence that the tonic phase was probably carried out by the cerebellar vermis or nuclei of the brain-stem adjoining, and that the later clonic phase was carried out by the left Rolandic cortex, I was able, by operating and draining the cerebral cortex above the tentorium, to dispel the clonic element altogether and leave only the basal tonic element of the fits, which continued as pure emprosthotonic fits for two weeks. Then, after more than 20 of these purely tonic fits, bilateral suboccipital drainage of the arachnoid space immediately and permanently dispelled this residuum and she has never had either kind of fit since.

Quite apart from numerous other cases of this kind, I hold that this case alone furnishes almost conclusive evidence that the fits were due to fluid pressure upon the various parts of the brain. There was never a discoverable or suspected toxæmia. Granting this, and bearing in mind that the fluid was normal cerebrospinal fluid and that at operation I saw constricted

arterioles, I claim that it is at least probable that the fits were due to compression of the fine terminal filaments of the cortical arteries, producing the clonic element, and of the cerebellar and midbrain arteries, producing the tonic element. It is to be remembered also that in this and all similar cases vaso-dilators, such as alcohol and chloroform, can temporarily check the fits; but in order to do so, the vaso-dilatation has to be sufficiently powerful to displace some of the excess fluids external to the brain into the impaired lymph channels of the arachnoid and into the veins.

Other strong evidence can be adduced from the effect of change of posture in this child after the various operations as described in the original report. Her state of consciousness during and after the different kinds of fit is instructive. As already stated, she was disoriented, unruly, and aphasic after the pre-operative 'mixed fits.' In a few purely clonic fits of the right mouth and right arm she did not lose consciousness, but was very exhausted afterwards. In the purely tonic fits, consciousness was lost instantly at the onset, but she was well oriented immediately after the trunk relaxed and once asked, within 20 seconds, if a stranger who had come into the room had noticed anything wrong.

The state of consciousness after these pure emprosthotonic fits may well be considered in conjunction with that of N. G. (Case 6 of this series), who suffered from pure opisthotonic fits and who was rapidly oriented afterwards. Everything in the clinical history and subsequent cure of Case 6 pointed to a vascular disturbance of the brain. Hers was the palest cerebrum and cerebellum that I have ever inspected. Also her attacks were more easily staved off by small doses of whisky than in any other case of which I have had experience. Whether the fact that she is a strong-minded lady of great intelligence and calmness had anything to do with the stability of the cerebral cortex, that it did not participate in the convulsions, I do not speculate; but she used to fight valiantly to prevent the upward march of the myoclonus that so often terminated in purely tonic opisthotonus but never in clonus.

Assuming for the moment that attacks as in Case 6 are due to angiospasm of the midbrain arteries, causing a complete break in conductivity immediately above the colliculi, then the unconsciousness is most likely due to the cutting off of all afferent stimuli to the cerebral cortex, but the cells of the cerebral cortex are not exhausted as they are during a cortical clonic fit. Hence, as soon as the circulation is restored to the afferent tracts in the midbrain, the cortex is able to resume its functions, because it is not loaded with the products of violent katabolism. (There is no way of gauging the "inward awareness," as Pearce Bailey calls it, during this state of decerebrate rigidity.)

Stated in another way: In the purely tonic fit, the patient is unconscious because the cerebral cortex is wholly unoccupied; the coma is sudden and the recovery rapid. In the clonic fit, the patient is (sometimes) unconscious

because the cerebral cortex is over-occupied—in restoring its capillary circulation or, at least, in trying to regain oxygen ; the coma is often incomplete and the recovery is tardy, as is usual with exhausted tissue. Also, transient ophthalmoplegia and bulbar paresis may follow a tonic fit, but paresis of arm or face commonly follows a cerebral clonic fit.

Anatomy provides a certain support for the angiospastic theory of a typical fit. The central ganglionic systems of arteries have no peripheral anastomosis with each other or with the cortical arterial system. If, then, we assume a slow wave of spasm to be passing out from the vasomotor centre in the medulla, it is likely that the proximal fine terminal arteries of the midbrain will become occluded before the larger, more distal anastomosing middle cerebrals. If this be so, is it not an adequate explanation of the fact that tonic spasms usually precede the clonic in a typical fit, but that in some fits the tonic element is never followed by clonic movements at all ?

In regard to the surgical treatment of convulsions in general, no man did more work and wrote so comparatively little as Sir Victor Horsley. As long ago as in the 1901 edition of *Principles and Practice of Medicine*, Sir William Osler, speaking of Horsley, MacEwen, and Keen, says that of 50 cases of trephining for epilepsy in which nothing abnormal was found to account for the symptoms, 25 were reported as cured and 18 as improved (page 1101).

It would be unfortunate if reports such as the present were construed as advocating indiscriminate surgery in cases of convulsions. Probably not more than one-third of the cases would derive the slightest benefit, and some might be further handicapped, quite apart from the danger and inconvenience. Moreover, our present knowledge of sources of toxæmia, of the action of the ductless glands and of the emotions has greatly improved the medical outlook of a great number of cases. Also, there is always a residuum of ' declining stock ' whose medulla oblongata could never be improved by any measures whatever.

It is impossible to lay down any rules whereby the surgically promising cases can be segregated. A careful history, combined with a broad survey of the individual himself, and a careful examination in all cases will, in conjunction with the operative findings, eventually develop that clinical sense necessary for dealing with this particular symptom-complex. Most important is to see and analyse the fit as often as possible. Even then, discouraging mistakes will occasionally occur, and the surgical results are apt to be the more discouraging because the inclination of the surgeon will naturally be to select only the most hopeless and long-standing cases which have resisted every other form of treatment.

The surgeon, however, will have this theoretical consolation, that a delicate organ like the brain, which has for years been the seat of all the major

symptoms, is not likely to recover imprisoned as it is in a sealed ivory box. The circulation of this organ can obviously adjust itself more readily when it has room to expand and contract. When the skull is intact, the brain can only adjust the circulation in co-operation with the volume of the cerebrospinal fluid and the venous flow. Both these latter factors are delicate mechanisms, easily thrown out of gear. Especially delicate is the balance of production and absorption of the cerebrospinal fluid. Hence experimental surgery, even in the most unpromising cases, is apt to be followed by unexpectedly favourable results.

For this reason I have thought it well to record a few facts sufficiently established by lapse of time and still easy of verification by anyone interested, and am content to leave the scientific deductions to those better equipped than myself.

ADDENDUM—While this paper was in the press additional information has come to hand in respect of Case 2 in the series. Since May, 1926, the patient has had five attacks of tonic basal spasm, the first since November, 1917. On re-examination at the end of January, 1927, I obtained a history of headache and vomiting before each attack, and found both optic discs to be œdematous. The knee-jerks were absent. I performed a bilateral suboccipital decompression on March 31st, with division of the occipital sinus, and so far the patient has done extremely well.—C.E.R.

PROGRESSION AND REGRESSION IN TWO HOMOSEXUALS.*

By T. A. ROSS and R. D. GILLESPIE, London.

INTRODUCTION.

There has of late been a considerable demand that psychopathologists should produce less theory and more case-material, and yet it is difficult to get such material published. It is apt to be very bulky; editors fight shy of it. Nevertheless it is essential that material should be forthcoming if psychopathology is to stand. Freudian literature is much too full of such statements as: "Now psychoanalysis teaches us." But where it does so is commonly not stated. It is likely enough that the individuals who write such words have come across evidence in the course of their practice which bears out their statements, but the movement does not appear to wish for converts. Psychoanalysts seem to be agreed among themselves that certain things are taught by analysis, and they do not seem to be afflicted by any compulsion to prove to the gentiles the truth of what is accepted by the orthodox. The two cases, which we are about to describe, appear to support certain doctrines on which the analysts are agreed; many of their features are difficult to explain, except on Freudian theory. In saying this we make no claim to be orthodox Freudians; indeed the latter would reject us without consideration did we venture to do so. If it is necessary to explain our position we feel that certain fundamentals of Freud's views are true, but that on these he has raised a superstructure which is of less sound material. We may leave it at that.

About the two cases which we propose to present there is a further interest, viz., that which concerns homosexuality. Homosexuality is generally regarded as essentially a fixed thing; a person is afflicted with a certain degree of homosexuality and for that person it is a constant thing, a part of his 'make-up.' Often enough that may be so. But in one of the patients before us homosexuality was merely a symptom—a very complex one it is true—and liable like all symptoms to have a time when it faintly began, a time when it slowly grew, and a time when it faded and disappeared. In the other, homosexuality did not emerge into consciousness till the patient was in his prime. It persisted in consciousness for a time and then was projected. In neither case was it static.

Lastly, it may be said that each of us is responsible for the description of the case which he will read and also for the comments he makes. The

*A Paper read in the Section of Psychiatry of the Royal Society of Medicine, February 8, 1927.

paper is, therefore, not so much a joint paper as two separate ones, which are presented together because they teach so strikingly that a complex symptom of this sort may when it is examined be the index of very different processes and the herald of very different events.

I.—A CASE OF HOMOSEXUAL INVERSION.

The patient, who was seen first in January 1925, was a man of wide culture and possessed of great energy in his business, in which he had been highly successful. He was 47 years of age, and of spare habit of body; on physical examination he presented no features indicative of any departure from the masculine norm. His dress was on the whole careless; there was nothing neat about it. His physical health was good.

His mood was on the whole depressed; but at times he was in a state of intense resentment against the fate which was causing him to be obsessed with certain mental images which were loathsome to him and which were preventing him from concentrating on other subjects. His work had become impossible, and he had ceased to be able to take pleasure in art, music and the other good things of life in which he had formerly delighted.

So far as he could remember he had never taken any interest in women, save that he liked to talk to them in company. As a young man in the twenties he used to walk home from church in the company of two young ladies, and he enjoyed doing so. After some time their mother withdrew one of them, and he was thrown against his will exclusively into the company of the other. This was a source of worry to him. He felt that he was being regarded as an eligible suitor, and he soon gave up the friendship. Further exposures to the risk of marriage made him shun society; thereafter he occupied much of his spare time in philanthropic work. It did not strike him then that this betokened anything anomalous in his sexual attitude. He was simply not interested in the question, and disliked being pursued. His new interest lay chiefly among boys in the east of London. Among them he made many friends; certainly no trace of conscious sex feeling was aroused by them, not at any rate for many years.

A few years before he came under observation, however, he began to realize that there were some constituents among his ideas concerning the male sex besides those of normal philanthropy. He began to imagine a man taking him and "doing something to him," what he did not clearly visualize, though he recognized it as something wrong. He became full of doubts and fears. In July 1922, two-and-a-half years before he came under observation, he had a miserable undefined interest in the 'behind' of a golf caddie, which made him so ashamed that he could not bear to mention it even to the doctor whom he was consulting at that time, on account of his doubts and fears. Later that summer he was bathing with a boy, who stood in front of him on the shore, naked, presenting his back and complaining of a pain in a vein just above

the knee. The patient touched the vein and had a curious sensation of thrill. He told the boy it would be all right and ordered him to dress. At this period he had begun to associate love with doing something face to face, and hitherto he had no idea of love-making otherwise than as face to face. Later that day, however, he had an extraordinary feeling of exaltation, and kept repeating to himself, " Happy in love and happy in chastity." The morbid interest in the caddie's ' behind ' disappeared, and he became much happier than he had been for some years. He became gradually more developed as regards the entire sex question ; it had become a combination of psychical love with an embrace face to face. Later he came to think that this forgetting of the ' behind ' was more apparent than real, for he recollected that during this period, interest was usually aroused by the sight of the bare knees or neck as seen from the back.

Some months later he was having a holiday with two brothers, whose ages were seventeen and twelve-and-a-half. He was reading to them. The younger was sprawling on the sofa, face down. He looked up from his book to see the elder gazing fondly, as he thought, at the arch of the buttocks of the younger. He dismissed the idea as crude. A little later the interest in the ' behind ' increased, and about this time he dreamt of a valley between two hills. During a subsequent attack of influenza he realized without the aid of a psychoanalyst that this must mean the buttocks. It would not, however, be justifiable to cite this as an interpretation arrived at by the patient independently, without the help of the Freudian school. As was said at the beginning, the patient was a man of wide culture. When he came under observation he had a considerable knowledge of psychoanalytic doctrine though he professed to have read little of the literature. Of late years general literature has been so full of this doctrine that no widely read person can hope to be in a state of virginity regarding it. All that is meant is that no analyst was in attendance.

About 18 months before he came under care he had a frank dream of a boy's buttocks, which recalled the memory of a homosexual act which he had witnessed at preparatory school. He recollected that at the time of this occurrence no emotional feelings had been aroused, neither desire nor disgust. He had merely looked at it and forgotten about it. But after this dream he had no peace. Formerly he had been fond of boys and men ; he used to go to his boys' clubs and boys' schools and been ' hail-fellow-well-met ' with everybody. He had also got on splendidly with men. Now in his association with them there was nothing but degradation. Whenever he saw a boy, especially if he were wearing a short jacket, he could not avoid visualizing his bare buttocks. Soon after he had the influenzal attack referred to ; and with it there was great depression. Then followed an alternating state. In the one phase there was this interest in the anus, always felt to be wrong and hateful and accompanied by shame. There was sometimes the capability of

transferring this interest to the anal region of women, but this was accompanied by great fear. In the other phase there was interest in face-to-face love with males, which appeared to the patient to be normal, but not to be carried out because of absurd conventions and because it might disturb the peace of mind of the partner. In this latter state the penis of the partner was of importance; what he himself did was vague.

As time went on the anal interest with all its psychical disturbances began to assume the major role. The patient could not see a boy without the appearance of the anal image: he could not think of a woman without the word 'shit' coming to his mind. His misery became so intense that he could see no escape save by suicide, and in September 1924 he made an abortive attempt in this direction. After this he became more and more unfit to do his work, and on January 20, 1925, he came under care.

The patient then regarded himself as a pure homosexual of passive or feminine type. He regarded the matter as chemicophysical, hereditary, inevitable. What he desired was that somehow he should learn how to reconcile himself to his terrible misfortune.

This view of the essentially hereditary physical nature of homosexuality is that which probably receives the greatest amount of support from sympathetic opinion. Uninformed opinion is usually that the homosexual is a vicious person who has chosen to do the wrong thing, when he could equally have chosen the right. The earlier scientific observers naturally reacted strongly against this view. They found among homosexuals many high-minded persons, valued public servants, courageous soldiers. They found among them many, who from the highest motives had refrained all their lives from the slightest attempt at carnal intercourse. It was, therefore, impossible to endorse the crude lay view of the vicious person. Bloch[1] called these people pure homosexuals, and distinguished between them and those who practised sometimes homosexuality and sometimes heterosexuality. Havelock Ellis[2] considers that the hereditary element is the most important factor in the genesis of the condition, though he points out that there is often some event which determines its manifestation. As might be expected, Freud and his school have explored the possibility of the condition being one which is acquired, and their conclusions differ considerably from those of the earlier writers. They may be summed up thus: passive homosexuality in the male and active homosexuality in the female are probably physically determined; active in the male and passive in the female stand a good chance of having been acquired.[3] There is really not much difference between these views except that more emphasis is laid by one school on heredity and by the other on environment. For practical physicians the special doctrines insisted on by each are almost equally important. As the sequel of the case we are now studying shows, we shall be wise if we neither sit down with folded hands and say that nothing can be done, nor make promises that we can transform a sufferer from this

anomaly into a perfectly normal heterosexual person. Anyone who has departed so far from ordinary development will probably always be a person for whom marriage should be regarded with considerable misgiving.

As stated above, the patient had regarded himself as a pure feminine, and no attempt was made at an early stage of his treatment to alter this belief. He had what seemed to him good reasons for his view. All his ideas of exalted love were associated with males; his dreams were of males, and of very masculine males indeed. They had great beards, and were large and powerful men. The patient felt that he himself was a great exponent of the feminine mind. He told me that men made a great mistake in being, as most of them are, clean shaven; that all women would prefer to be made love to by bearded men. On its being pointed out that the ladies of a household commonly said that they would have nothing to do with their men if they grew beards, he said that I should know that what they said openly did not necessarily represent their wishes. The inference was that the beard was a species of exhibitionism which was objected to in public. The patient also felt at home with women if he was in the company of several of them; he felt that he liked gossiping with them, "with his sisters," as he put it. He had felt also that when he went to business meetings with men he would have liked to go gaily dressed and be the lady of the party. There was also the fact that in his phantasies of sexual union the penis of the partner was important; his own was not. Against this view there was the anal interest, which was certainly not an interest in his own anus, but in that of someone else, male or female. This seemed to negative pure passive homosexuality. His clinging to the idea that he was of that nature may be ascribed to two reasons: (1) he had been told repeatedly that he was "pure woman," and on grounds which will be shown presently this was probably the more important; (2) his insistence may have been a protest against that which was a source of absolute horror and detestation. If only he were feminine the anal interest might perhaps have no real existence. He did not consciously look at it in this way; he said that what upset him was that he, a pure homosexual and a woman at that, should have contemplated doing what is a masculine act.

Seeing, however, that what he was aiming at was reconciliation with his position, nothing at first was attempted beyond trying to achieve that end. He was assured that one need not loathe oneself for that for which one is not responsible, that it could not at one and the same time be true that he was suffering from a physical anomaly and that he was blameworthy. This view seemed to help, but in a few days he produced a document of grievances against a number of authorities, against Providence for making a muddle; against the whole community for telling people like himself that they were sinners, for actually imprisoning them whilst they themselves freely resorted to prostitutes, for leaving female homosexual sinners free to do as they like, for preaching that male love is necessary for the procreation of children while they use

contraceptives on an increasing scale, and for withholding the slightest meed of praise from those homosexuals who abstain from following their natural desires; against friends for advising marriage; and finally against doctors for preaching altruism against those who have murdered themselves with altruism for years and are sick of it; these doctors even say "they have given a good talking to those of us who have rebelled against convention; and when we are haled before a court for following what they know perfectly well is our nature they never raise a finger to save us and to let the community know the truth."

This charge, of which the above is a condensation, was listened to without comment of a critical kind, and no objection was raised to any count in the indictment. Three days later the patient had overcome his feeling of resentment against the universe and said that he had no grievance against nature which bungled often, nor against the members of society for being bound by convention, which is an honest attempt to aid the evolution of human goodness and achievement; that though heterosexuals in one sense gain unjustly by freedom for crude love, yet homosexuals gain by their really increased opportunity for renunciation. During the next fortnight the details of this renunciation were fully worked out by the patient, with the result that he felt no longer afraid of his affection for boys, and though the anal image persisted it no longer assumed a degrading aspect. During a week-end he visited a preparatory school and enjoyed his association with the boys very much, quite as in the old way before he became ill.

About the middle of February, just after this position had been gained, the patient said that for some months he had been noticing that there had been an increase of growth of hair on the hands, arms and chest, also that his penis had been growing greatly. At the same time he had a vague dream of women's breasts, and thought of it after wakening without aversion. He felt that the idea of women's breasts would previously have caused a certain amount of disgust. The suggestion was then made that possibly he was not a pure homosexual after all. He was mildly interested in the idea.

A fortnight after his visit to the preparatory school he again spent a week-end at it, and when he returned he appeared to be in a state of depression. The fear was expressed that he had once more been upset by anal images, but the explanation which he gave was of an entirely different and indeed unexpected nature. After some difficulty he confessed that he had been greatly disappointed because the lady of the house had been away from home. He had been himself astonished that her absence should have affected him, but he had no doubt that it was truly the cause of the failure of the trip.

When the patient came under care in January he had very little recollection of the facts of his boyhood, but he always maintained that he was sure that he had had no interest in girls. Soon after the week-end just referred to, he remembered much to his astonishment that he had been in the habit of going to young people's parties, and that he had danced with girls with pleasure,

even that he had sat out with several. The pleasure which he remembered now was not sexual in the sense in which he understood that term in later years. It was not accompanied by any physical manifestation. Indeed no such manifestation had happened to him at all till a few years before he came under observation, when his homosexual consciousness was aroused. A few days later there came a memory which seemed to decide not only that he was not an obligatory homosexual but also to explain why he had been diverted so completely from the heterosexual path. Somewhere about the age of 15 he was sitting on a lawn with his legs wide apart, and a girl came and sat between them close up with her back to him. His recollection is that he had no genital sensation whatever, but he suddenly found himself undoing her dress which fastened up the back; when he had got some way with this her mother appeared and was furious. He was staying at the house. She forbade her daughter to see him alone again, and next day he went home. He never returned to that house; he met the girl subsequently but disliked her.

It was pointed out to the patient that he had been interrupted while committing a heterosexual act, even though this aspect of it had not been in consciousness; it was also suggested that the whole affair had been rapidly subjected to repression, that his already delayed sex-consciousness was by the unpleasantness of the sequel to the act delayed still further, and that when it did develop it was inhibited from doing so in a heterosexual form. After the event an interview with a lady alone was avoided; the risk of unpleasantness was too great. The patient was told also that it is probably true that bisexuality is hardly abnormal in boys about the time of puberty, though the form of choice is the active masculine; the boy who acts the passive part often does so under duress. The patient, therefore, when puberty came to him at 40 years of age adopted the active role; he was male, homosexual because up to the time of the awakening of sex-consciousness homosexuality had given him no trouble, while heterosexuality had. These considerations appeared to the patient to be reasonable. Thereafter his normal heterosexuality unfolded itself with inconvenient rapidity.

Before, however, the history is traced further it may be worth while to examine certain theoretical considerations. In the literature there will be found other examples of change of sexual object having occurred in comparatively late life. Ellis[4] describes persons who veered round after disappointments in normal love. Oberndorff[5] describes a woman who had been seduced by her brother at the age of ten. She feared pregnancy and thereafter masturbated till the age of 16, when she again associated with men. At the age of 25 she again feared pregnancy and thereafter became definitely homosexual. There is, therefore, nothing unprecedented in recording mere changes, but as there is a considerable amount of pessimism with regard to all homosexuality, especially when the history shows no normal period, it is worth while repeating that such changes do occur.

The present case has, however, some other points of interest. To one of these allusion has just been made. The patient had been heterosexual, and though this had continued up to 15 years of age he had lost all memory of it. He had attempted what was probably a sexual act without understanding what he was doing. We have here examples of two forms of repression—repression from consciousness into an unconscious system of that which is associated with unpleasantness, and the prevention of emergence into consciousness of something which previously had never been in consciousness, but which was destined to be active before it became conscious: if this is true the case is one which deals a serious blow at the physical or engram theory of memory. According to this theory that which is not in consciousness is only a neural disposition or engram; it has only potential activity and cannot play any purposive part in influencing conduct till it is reproduced in consciousness, till it is ekphorised. It is difficult to escape from the contention that the affect associated with the trauma in the garden repressed the memory of the experience into an unconscious which was, however, a part or aspect of the patient's mind which helped to influence his conduct for many years. It is not easy to see why a person who had hitherto enjoyed the society of the opposite sex should thenceforth cease to do so (except under special circumstances of safety) if the new conduct were due only to the fact that certain engrams had failed to be ekphorised. Failure to ekphorise could hardly have induced a carefully chosen life for a long time. It is really considerably easier to suppose that the man was a common liar, who remembered all the time that he had once been fond of girls, that he had been caught misbehaving, and was so poor a creature that he had been careful never to put himself where such a catastrophe could happen again, who had later on when sexual desire became prominent bethought him that he could satisfy himself more easily by sodomy than by the awful risk of women, who instead of satisfying this lust went about to doctors saying that he felt degraded, yet who when he was told that he had done nothing degrading dropped the idea of sodomy before he had taken on that of normal heterosexuality in any lustful form. This is an easier view than the engram view, which really fails to produce a dynamic picture at all, but it is a more difficult view than that which suggests that there were mental processes directing the patient's conduct but that he himself was unaware of them. It might be said that the act of unbuttoning the clothes had nothing to do with keeping sexuality in general repressed. It may be said that it was not a sexual act, was a purely instinctive or automatic one and not purposive if the purpose was not conscious—if the purpose was conscious we again revert to the 'liar' theory. It was not automatic for it had never been done before; it was not instinctive. We can hardly predicate an instinct for unbuttoning clothes. It must, therefore, have been purposive and its purpose must have been to take the lady's clothes off. That can really be only a sexual purpose. We must, therefore, take it that he had thereafter been subjected to a repression of sexuality.

When he had been freed from the incubus of this repression he immediately began to fall in love with women, and in a few weeks was definitely so with three, all of them many years younger than himself. He became obsessed with the idea that he must marry soon or he would presently be too old to do so. From many points of view any thought of his becoming engaged to one of them was to be deprecated, and he was repeatedly advised against such a course. He did, however, become engaged to one, not because he liked her most but because she was the oldest. It seemed that this was in obedience to the now flickering light of his old altruism.

It must be confessed that so far the comparative success of his development had been accompanied by deterioration of character. In the old days all thought of doing anything which might damage a sexual partner had been rejected, but now he behaved for a time in a very irresponsible way. The engagement was no sooner made than he broke it off. He was not ashamed of this for several weeks, saying merely that he was sorry if he had caused any trouble. The story of Faust is an old one with several aspects. The moderns have usually been grieved for Margaret, the older writers like Marlowe did not mention her; for them the tragedy is that of the venerable sage who when given the gift of youth could commit only one folly after another; to the present writer there seems room for pity for Mephistopheles, who was unlucky enough to be an agent who helped these things to come to pass

When the patient realized as he did that his conduct had been reprehensible there was a period of some weeks of depression with a certain revival of anal images. This, however, disappeared later and was replaced by a saner steadier view. If marriage comes he will not refuse it, but he is no longer obsessed by sexual desire in any form, neither is it a thing to flee from.

This was written some months ago. Since then the patient has married, but it is too soon to say whether this has been a wise step or not.

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II.—THE PSYCHOPATHOLOGICAL DEVELOPMENT OF A PARANOID PSYCHOSIS.*

INTRODUCTION.

The history of this patient is of interest from the manner in which it furnishes data for psychopathological theory. The case presented an unusual opportunity for observing the gradual development of a psychosis from a very early

*Being one of a series of cases in a study of "Personality and Psychoneurosis" by the writer, working as Pinsent-Darwin Research Student of the University of Cambridge.

stage. It is by such cases as this one, in which there has no been interference or inference by a physician (who is presumably prejudiced in favour of a particular hypothesis) that psychopathological theory must stand or fall. In the clinical records on which the Freudian psychology has been founded it has usually been possible with considerable show of justification to allege that many of the fundamental premises were furnished by the observer, and accepted and elaborated by the patient. In this instance there was no suggestive interference on the part of the observer; the symptoms unfolded themselves spontaneously under his eyes. The history of this patient also illustrates some pitfalls in early diagnosis. Superficial examination would have led to the belief that a psychoneurotic (obsessive-compulsive) type of disorder had passed directly into a psychosis. More critical examination showed several differential points in favour of a psychosis from the beginning.

CASE HISTORY.

The patient (W. B., age 54) came complaining of troublesome thoughts, which insistently recurred. For example, after retiring for the night, it would occur to him that the fire had not gone out, or the house-door had not been shut; and he would often have to get up to reassure himself on these points. He had always been overcareful in matters of that kind, and in his personal cleanliness, but in the last few years his carefulness had been increasing and he had feared that it portended insanity. On admission he was afraid also that he had diabetes. His lack of concentration, which depended at least in part on his troublesome thoughts, had made him unfit for work for the past seven months, and he had been depressed to a varying degree for the same period. Whenever he worried he had unilateral (right-sided) headache, and pain in "the middle of the stomach." He complained also of pain in the eyes, of becoming hungry too soon after meals, of constipation, frequency of micturition and impotence.

Family History.—He was the only child. The rest of his mother's children, with whom he was brought up, were much older than he. The eldest stepbrother had "religious mania" at 20, and had never completely recovered. The remaining stepbrothers and sisters were unsuccessful in life. His mother and father were both described as "nervous" and very "high-strung." He himself had three children, all more or less "high-strung."

Physical Condition.—He was of the spare athletic type, and of sallow complexion. There were mastoidectomy scars in the right postauricular region, and there was complete loss of hearing to watch or voice on the right side. There was rarefaction at the apices of four teeth. Radiography showed the stomach in the false pelvis, but it emptied in two hours. There was a right inguinal hernia, without symptoms. The blood-pressure was 110/70; the r.b.c. were 5,450,000, and the w.b.c. 6,600.

Personal History.—As a child he was afraid of the dark, had nightmares, and was considered delicate. He was at first at a day school, and when it was planned to send him at the age of eleven to boarding school, he begged his mother not to allow it. She yielded and he remained at home with a tutor. At the age of 19, following a period of idleness and aimlessness after leaving school, he became apprenticed to a trade. He changed his employer several times after his apprenticeship had ended, but always for promotion. For the past 17 years he had remained with the same firm, whose business had grown immensely under his supervision. The owner of this business, of which the patient was manager, had never appreciated his work fully, and had been inconsiderate and even nasty on several occasions.

The patient worked very hard during the war—till 2 or 3 a.m., with only four hour's sleep. He was not a good business man, although he was efficient at the practical part of his own job.

He had several illnesses. At the age of 32 he had a radical mastoid operation, at what was said to be a late stage of the septic process; and he had had his ear inspected and cleaned regularly ever since. For two years before the operation his wife had observed that he was "nervy" about everything. He frequently suffered from bronchitis and several times had carbuncles and influenza.

Personality (from wife and himself).—He had always been "naturally fussy," being overexact and overscrupulous in everything. His clothes were very dapper, and his bedroom stank of eau-de-cologne. He was extremely cleanly in his habits and spoke with horror of dirt. Once, in a moment of inspiration, he remarked, "Clean! I am beastly clean." Trifling ailments in himself or in his children were always associated with excessive anxiety, and he was also habitually afraid that the children might meet with some accident. He was inclined to be pessimistic in everything, and lacked self-confidence. His chief interests were his house and his work, and he seldom indulged in any recreation away from home, but in the last two years he had spent Sundays golfing in very strenuous fashion. He disliked being alone, and was very dependent on his wife for everything. He was shy and sensitive. His mood tended to be depressive, and after influenza, which he had several times, he was "frightfully depressed." In these postinfluenzal periods the thought would suddenly occur to him to his dismay while shaving, that he might attack his wife with the razor. He was very conscientious and "took things rather hard." His work was always difficult for him. He was "sound but slow," but except when physically ill, he had felt capable of it. He felt obliged to be always doing something, and could not take things easily. His employer was "very brilliant," and the patient felt the inferiority of his own mental equipment. He had always lived up to the full extent of his income.

Present Illness.—His wife had noticed for two years past that he was very "slack" at his work, whereas formerly he had been very keen. At Christmas

1924 the patient felt himself unusually well, but in January 1925 he had influenza and was mildly depressed and less capable of work after it. In April he ceased marital relations, lest he should injure his health.

In May a carbuncle appeared at the back of his neck, and it drained for ten weeks. Following its appearance he became more depressed, and his depression increased suddenly in the last week of June, while he was on holiday. His only son had just gone back to school at that time, and there came to live nearby his brother-in-law, a very successful man with whom the patient had always compared himself unfavourably. ("He is absolutely brilliant. I found I could not keep up with his conversation.") On returning to work in July he found he could not do it, had a great dread of responsibility, and worked only a few hours a day. It took him hours to do what he used to do in a few minutes. He had to revise numerical additions time and again. Soon he began to give vent to definitely depressive ideas, e.g., that one half of his head had gone. He said that he had not been a good husband, and although he did not speak directly of suicide he disliked having a razor about. His carefulness about unimportant details increased, e.g., whether the gas was turned off at night. He lost weight, but regained it with special dieting. His sleep in the last two months became scanty and broken, and he became gradually more and more useless at his work, from preoccupation and lack of concentration.

On his admission, the first thing that struck the observer was the extreme neatness of his dress, and his general air of great personal care and cleanliness. He looked slightly anxious, and complained that he was depressed and worried. He talked readily about himself, mentioning the complaints already enumerated, and finally, with some hesitation and reluctance and with prefatory remarks that it was "awful," he said that he was afraid to be among a crowd of men, because then he had sensations in his genitalia. He reiterated that they horrified him, and he assured the physician time and again that he had no desire for these sensations. There was no formal disorder of thought, and his sensorial and intellectual resources were intact. He had excellent insight for the fact that he was ill, and that his illness had a mental colouring.

The remainder of his symptoms are best taken in the chronological order of their development while he was under observation.

For a time his preoccupations were with apparently indifferent and trifling topics, such as whether he had extinguished a match before throwing it away, and where he had thrown it. He had always been very careful as to cleanliness after a stool, and this carefulness had recently increased to a degree that worried him. He was also concerned about his health; he thought that his headaches, being right-sided, might indicate that his former ear-disease had lighted up and affected his brain. On this point he had difficulty in accepting reassurance. He ceased, however, to be anxious about the possibility of his having diabetes.

On February 15, 1926 (nearly three weeks after he first came under observation) he was much disturbed by the thought, " I have been unfaithful to my wife," which had occurred to him after he had smiled to a woman friend that day. He professed to be " comforted " greatly by the assurance that it is just those thoughts that are most repugnant that tend to be insistent. He always apologised very profusely when mentioning anything " dirty " (e.g., as to stools—" Excuse my mentioning this ").

On the evening of the same day he attended a concert, at which he had an erection, with the thought, " Well, I'm far enough away from the man next me." He attributed the erection to a distended bladder and to tightness of his belt, but was nevertheless horrified at the feeling and its accompanying thought. On the same night he went to bed with a feeling of local sexual tension, and was afraid that he would have a nocturnal emission. The latter did occur and he was very much distressed for two reasons: (1) that it was " dirty," and (2) he believed that it was caused by the homosexual ideas of the preceding day. He would not accept the reassurance that homosexuality was a normal component in many people, but was on the contrary horrified at the idea. Promiscuous sexual thoughts about women were also greeted with extreme repugnance.

On February 18, in response to some general inquiries, he said he had begun to " fancy " things. He explained that he thought—but he " was not sure "—that as a child—" oh, a very tiny child," age about seven—he *might* have invited another boy into a lavatory, but he " did not do anything " (he thought). It has also occurred to him that he used to have " itching piles " and used to tear at them savagely—" perhaps this was the same thing, and not really piles at all." He had used an ointment and stopped scratching after it was applied.

There was now a definite and complete change in the nature of his obsessive thoughts. His preoccupations with indifferent topics, e.g., where he had dropped a match, ceased; and the content of his preoccupations became entirely homosexual. On the 20th, he complained of " pressure in front and behind," became panicky, and sent for the physician, who, at his request and because of the pain he complained of, inspected his genitalia and anus and assured him there was nothing. That night he had a nocturnal emission, which was " too beastly " and " horrible." On the 21st he was much concerned to know why the physician had examined him. " Did he want to see whether I had really done anything? Or was he trying to test me? " On the 22nd he became afraid while bathing that his " front would touch his back." He took precautions while drying himself, holding his genitalia up in front, and keeping his legs together. Spontaneously he said " It's *not* a wish. It's a fear that the dread will turn into a wish." He added that he avoided going near other men, and that he feared other people would observe this and consider him " funny." On the 23rd he recalled that he lived in bachelor rooms as a

young man and that a colleague next door used to have friends to stay with him. He now wondered whether anything took place there, but stigmatized the notion as "absurd." He said that he was desperately afraid that his homosexual ideas represented a wish in the "subconscious mind." Asked whether he had read any psychological literature, he replied that he had always carefully avoided it, because of a long-lasting fear of insanity, but that on one occasion only he had heard an assistant speak of the "subconscious mind." One the morning of the 24th he did not get up before the nurses came to his room, but he rose later and washed and shaved before the masseur arrived. It then struck him to his horror that he was making himself clean and presentable for the masseur, but not for the nurses. A short time later the same morning while cleansing himself at stool, his anus gaped, and he thought of the masseur again, with renewed horror. When the masseur did arrive it occurred to him that he might be obtaining pleasure from the massage, and he was careful to avoid touching the masseur with his hands. After the masseur had gone, he thought "It is over now"—and then it occurred to him that he had not wished it to be over. (Retrospectively he said that his thought really was how to pass the rest of the day). Further it occurred to him to speculate whether he had not always obtained a "sensual pleasure" from massage. He also wondered whether he did not anticipate a visit from the physician for the same reasons. He did not accept any reassuring explanations offered him, and remained preoccupied.

At dinner on the 24th he had a genital sensation which he thought portended an emission. He felt he would have to leave the table, but "kept a grip" of himself by "holding himself tight." This distressed him. "Think of the others, what they would say—and the odour." He asked next day whether "this kind of illness made him smell?" His socks "smelled more than they used to do."

On the 25th he had a presentiment that his son was ill. There was some foundation for this, as the boy had recently been sick, but had recovered, and the patient had heard no further news of him. Referring to his avoidance of other men, he said "You know, it's a fear. It's not a wish—but whether the subconscious . . ."

On the 26th he indulged in a retrospect of his past life, saying he had been selfish towards his wife. He then related that twenty years previously, after an operation, and twice subsequently after influenza, he had had a fear while shaving that he might do harm to his wife. On one occasion he had actually given away his razors. "It's a fear, you know." He connected this with a fear of insanity, taking his half-brother as an example, and also the case of a former assistant's father who had murdered his wife and family.

On March 1 he confessed that he had entertained suspicions of his wife's fidelity with a groom with whom he used to send her riding. She was very fond of it, and the patient was very bad at riding. By the 4th, he declared

that he remembered that he had enjoyed scratching himself and had made his pyjamas "all dirty." He now felt guilty about it—"in a married man, too". All this time he smiled rather readily, in spite of the depressing nature of his preoccupations, and although he protested vehemently his horror of his own thoughts, he was much more preoccupied than horrified. He spoke of his thoughts as coming up against his will; they were all "ridiculous," but he "could not throw them off."

The greater part of the night of the 11th was spent looking for lice in his bed. This idea about lice was superficially based on itching, and the presence of acne pustules which he feared were "bites." Diligent search on his part revealed particles in his bed which he called "scales" and collected in an envelope for the physician's inspection. He assumed them to be dead lice, or connected with lice and was horrified at the mere thought of them. He feared also that one might get into his ear and "eat through the bone" to his brain. His coat and pyjamas he also presented for inspection, saying that marks on them had been produced by lice. No reassurance had any effect. A few days later he proffered the theory that the "lice" might have been generated in an anal sore where he had scratched himself. He remembered that a maggot had appeared in an old truss. His wife visited him at this time and he blamed himself bitterly for not having followed the physician's instructions about occupation and recreation, and for having "made a fool of himself" by his absentmindedness. On the 23rd he was very anxious about slight caries in a tooth, inspecting it repeatedly in a mirror. He was concerned also about hairs which he found floating in his bath, thinking they came from his anal region, and complaining also of irritation there, which he supposed might be caused by "worms." At this time also he said with a considerable show of hesitation that he had the idea that he had inherited venereal disease from his father.

At billiards on the 27th the thought occurred to him that if he made a good stroke something might happen to his son, from whom he had been expecting a letter. In consequence he did not wish to make a good shot, but proceeded to his consternation to make an unusual break of 42, hoping at every shot that he would miss. He was much perturbed all day afterwards but was relieved by a letter from his wife, who did not, however, mention his son. On April 2 he was preoccupied by a "horrible thing" he found in his pocket—a piece of indeterminate organic matter, probably a raisin—which he supposed was dirt or a "scab" from someone else.

On April 3 he asked the physician in an apologetic way whether the latter was hypnotizing him. On the 5th he stated that an "awful idea" had occurred to him, viz., that someone had come into his room at nights. Four nights previously he had awakened to hear his door creak as if it were closing. He had also suspected that he was drugged, because he always woke up in perspiration about the same hour of the night. After some pressure he said

that he suspected another male patient (the only one with whom he had been a little friendly, and who belonged to a similar social station), who had come to his room several times to borrow a book or to ask him to play tennis. He felt that this other patient had come to do "something unspeakable" (a homosexual assault) because his anal orifice now felt always so painful. "I thought R—— was a decent chap—it's awful—I know you'll call it madness—a delusion." The patient then related almost word for word a conversation he had with R—— four evenings previously. R—— said he had "an awful pile" which "hurt like h——," and asked our patient whether he had a remedy. Our patient replied "No." R—— then "looked queerly" at him and the patient said "What did you say?" R—— replied "Have you any literature?" Both then went to the patient's room and our patient gave R—— some books, but felt very uncomfortable and did not ask him to stay. On the morning of the 5th he found his tobacco pouch empty, having as he thought left it filled the previous evening; and he wondered whether R—— had taken his tobacco "as an excuse for coming in."

He now explained his query of the 3rd (*vide supra*) by saying that R—— had told him that the physician had tried to hypnotize R—— twice. The patient expectorated some "brown stuff" and opined anxiously that he "must be rotting inside."

On the 7th he "felt confident" that his ideas were justified, although he said this with dismay and had in the previous twenty-four hours assured the physician, who made an intensive effort at correction of them, that he now saw them to be false. He now added that R—— had hypnotized him in his sleep, and that he had an "absurd idea" (which he nevertheless seriously entertained), that he had become pregnant. He complained of abdominal pain and distension, and instanced a newspaper paragraph which he had read long ago, in which a child was said to have been found in the abdomen of a man at operation. At the same time the patient pointed out that his abdominal distension was probably due to a visceroptosis.

At this point the patient went home, and his further career could not be recorded in detail. From a communication received from his doctor some weeks later, it was evident that he cherished his ideas of homosexual assault more firmly than ever. A letter received from his wife, January 1927 (a year after he came under observation), stated that he went downhill badly in the summer of 1926, and that lately he has been more and more depressed and broods for hours together. His doctor reported that he had a rooted belief that he has syphilis.

COMMENT.

The history gives definite objective evidence, almost of experimental value, on several psychopathological theoretical formulations.

The relation of the personal 'make-up' to the type of subsequent psychosis was very close. The patient was excessively neat in his appearance and of

scrupulous cleanliness, and these fulfilled very well some of the conditions of Freud's anal-erotic character. He was not, however, parsimonious, as he lived up to the full extent of his income. His personal neatness and cleanliness were very striking even to the casual observer and the emphatic mysophobic trend of his psychosis was in close conformity with these characteristics.

The appearance of frank homosexual tendencies, and their correlation with previous experiences—anal irritation and manipulation—were in close accord with the Freudian conception of the groundwork of such a personality.

The repugnance of the patient for these ideas, and his continuous rejection of them, with their subsequent appearance as delusions of homosexual assault, form an excellent example of projection and have almost the value of a laboratory experiment. The early symptom of indifferent preoccupation and its complete replacement by frank homosexual ideas, confirms with unusual clearness the Freudian conception of the formation of such obsessive symptoms by 'displacement.' Their replacement by homosexual preoccupations represents an 'unsuccessful defence.'

More striking still are the patient's spontaneous comments on his symptoms, especially his formulations in terms of wish, desire, and fear. He began by assuring the physician, who had never cast any doubt, that he had no desire for genital sensations in the presence of men, and that in fact they "horrified" him. His delicacy in mentioning anything "dirty" was exhibited by the profuse apologies with which he prefaced remarks of that kind. The conscious accompaniment of a local genital sensation was "Well, I'm far enough away from the man next me." Then came the spontaneous but half-disowned and still vague memory of a homosexual incident in childhood. When he began to take precautions against a fantastic 'self-sodomy,' he said "It's not a wish. It's a fear that the dread will turn into a wish." Here is very clearly and spontaneously expressed the conscious antithesis of a fear and a wish, in a way that suggests that the patient truly knew the origin of his sexual sensations as a wish, which, however, he could only allow to appear as a dread. But the defence was not at all successful, and the wish appears also in consciousness, but disowned by the conscious ego as a fear of the wish. His expression of a fear that his homosexual ideas represented a "subconscious wish" had a kind of tragic irony, coming from the victim himself, and being apparently so close to the truth. His obsessive ruminations about his anus and his relations to the masseur, coupled with his designation of massage as perhaps a "sensual pleasure," and his translation of his thought, "It is over now," into "I wish it were not over," furnish together a striking confirmation directly out of the mouth of the patient of well-known pyschopathological theories, and might indeed have been taken directly from a text-book. It might be argued that the patient had imbibed psychoanalytic teaching, but he denied totally having read any psychoanalysis, and had in fact scrupulously avoided it. The clearly expressed antithesis of wish and fear, and his translation of "It is over now,"

are such as could only have been made either by an earnest student of the subject, or by one who was suffering in himself. The spontaneity of these expressions, and the amount of associated affect of horror, could not well have been simulated; and their genuineness was confirmed both by the previous personality and by the subsequent developments.

The obsessive fear about his son's health, with the investment of his strokes at billiards with a magic potency in this regard, is at first glance not so easily accounted for, since the reason did not appear in the patient's consciousness. Superficial investigation revealed that the son's further education depended on his father's recovery. If recovery did not occur, the boy would have his career entirely blighted from lack of means. It is not far-fetched to suppose that the motivation of the fear was an unacknowledged wish to be rid of this responsibility. The occurrence of a magic investment of certain acts in this patient for only a limited period and in one specific instance, is striking, since there was no development of analogous compulsions at any time.

The method by which his obsessive ideas underwent delusional transformation and elaboration is also of interest. The dislike of dirt which had been so prominent in his 'make-up' became consciously connected with the anal region—particulate matter became "lice" and lice underwent spontaneous generation in a hypothetical self-inflicted anal sore. According to a Freudian theory, the sense of guilt associated with anal erotism becomes displaced to apparently indifferent ideas, producing a repugnance for "dirt," but both the substitutive ideas and the erotic memories may exist side by side in consciousness, apparently unconnected there. In this patient they were consciously united (once more ?).

The next event was the projection of his homosexuality on to another patient. The step was so obvious at the time that it was easy for the physician to anticipate it (without communicating his anticipation to the patient) and to know whom he would select. The person chosen was a man for whom the patient had a liking, and the only one with whom he had associated at all closely. This man was regarded as the aggressor, as was to be expected for several reasons: because only by putting him in the active position could the homosexual trend be disowned, because the emphasis in the patient's ruminations had been on his own anal orifice, and because of his general non-aggressive rather effeminate make-up. The passive role was carried to the bitter end in the subsequent fully conscious (delusional) phantasy of pregnancy.

The genesis of his tentative delusions of being hypnotized is also of interest—a chance remark of the patient from whom he soon came to suspect aggression, and the subsequent application of the idea to his own relations to the physician, in relation to whom homosexual ideas had once before been vaguely mentioned.

The patient's relations to his wife were possibly also significant. Even in his ordinary health, he had been accustomed to depend on her. She was a determined, aggressive, business-like woman, who managed him in his illness as if he were a child. His thoughts about her long before the outbreak of his

psychosis—his obsessive fear of killing her in periods of postinfluenzal debility and his jealousy of her groom—were illuminating in the light of later developments.

They help a little to support the theory of the psychic connection of marital jealousy with homosexuality and of sadistic tendencies with anal-erotism: connections which may yet be symptomatically expressed in the further development of the psychosis. MacCurdy rightly warns however against mistaking mere coincidence of the two members of each of these pairs of facts for evidence of a deeper connection between the individual members of each pair (as Freud is apt to do); and he also warns against assuming an element of desire to inflict pain in a phantasy of killing, in the absence of concurrent sadistic phantasies.

Incidentally, the history of the development of the patient's symptoms gives a stimulus to reflection on the nature of so-called "unconscious wishes," and "unconscious ideas." It has been said that in a psychosis the "unconscious" comes to direct expression, usurping the field of consciousness. A study of this patient suggests that it is not so much that certain wishes are originally unconscious, as that they are conscious but may be treated in various ways by the person who entertains them. The normal person either treats them with utter repugnance and can thrust them from him because his other wishes and interests are stronger; or he acknowledges them frankly as part of himself. The psychotic cannot do either: he has to abhor what at the same time he ardently desires: and projection occurs as a compromise between the desire and the fear that ran, for example, all through our patient's illness.

The diagnosis and prognosis were superficially difficult in the beginning. Superficially, the case had the appearance of an obsessive-ruminative type of psychoneurosis. But close inquiry revealed a very slow onset, of one to two years, with a progressive lack of interest in his work and in his family. There was a gradual development of a total affective disturbance in the form of a depression, partly on a toxic (influenzal and furuncular) basis, but with a sudden exacerbation apparently in response to psychic factors (his son's departure and his brother-in-law's arrival). His obsessive ruminations developed in the course of the depression. The early hypochondriacal trends (that "half his brain" had gone, for example) were also significant of a psychotic process, although they were at first mentioned only tentatively. The relation of his fear of dirt, and his hypochondriacal ideas—that lice had entered his ear, and his brain; that he was rotting inside; and that he had worms (anal)—is of suggestive theoretical interest for the understanding of hypochondriasis in some of its forms. The frankly sexual and perverted nature of some of his obsessive thoughts from a comparatively early stage pointed to something more than a psychoneurosis.

AURAL DISEASE IN THE INSANE.

By GEOFFREY W. ROBINSON, London.*

The extent of ear disease among the insane is probably much greater than is generally realized. The objects of this paper are to point out how common aural lesions are among the patients in mental hospitals, the types of ear disease, and that a relationship may exist between aural hallucinations and defects of the hearing system.

Two hundred certified insane people have been examined; of this number, according to their case-sheets, one hundred were aurally hallucinated, and one hundred neither had been nor were so hallucinated. In order to avoid constant repetition of the word 'aural,' 'hallucinations,' when used in this paper, will mean only 'aural hallucinations.'

Patients were selected for examination as hallucinated or non-hallucinated people; those that were violent or very resistive could not be satisfactorily examined; apart from these considerations the patients were chosen at random, and particular care was taken to avoid any being included who were sent for examination because of ear trouble.

The hallucinated cases have been divided into three groups, composed respectively of patients that were (1) definitely, (2) probably, and (3) possibly hallucinated. The *definite group* consists of those who willingly admitted that they had hallucinations; the *probable* and *possible groups* consist of patients who did not admit that they had hallucinations, and who were respectively probably, and possibly hallucinated. In many cases patients were willing to admit the presence of hallucinations, once they realized that the examiner was not officially connected with the hospital. On the other hand some were extremely suspicious, and refused to give any information; whereas others were mentally incapable of understanding the questions they were asked. Certain patients, who according to their case-sheets were definitely hallucinated, denied, on close enquiry, that they heard voices. Their explanations were that they became conscious of their own thoughts, or the answers to unspoken questions; some of these patients believed that the explanation of these symptoms lay in their own minds, others that it lay in outside agencies. These patients have been classified as belonging to the possibly hallucinated group.

The aural disease that was present in these cases, including both the hallucinated and non-hallucinated classes, consisted principally of middle and internal ear disease. When testing for lesions of the internal ear in patients who suffer from mental disease, two factors must be considered; (1) senile deafness is common among arteriosclerotic people, and (2) it is impossible for some of the patients to keep their attention fixed long enough to give accurate

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results, when tuning-forks are used to test their hearing powers. Therefore, although every effort was made to obtain accurate figures with regard to internal ear deafness, yet a certain percentage of error must be present in the final figures ; however, it is not sufficiently large to make a marked difference in the results. Happily with regard to middle-ear deafness the position is more definite ; apart from tuning-fork tests, abnormalities of the middle ear can generally be detected by routine examination, and the presence of deafness may be surmised even when it is impossible to test by the usual methods.

Sixty-six per cent of the total number of patients examined were suffering from aural disease ; the remaining thirty-four per cent. were normal as regards their aural condition. Ninety-two men and one hundred and eight women were examined ; and the percentage of aural disease was slightly greater among the men than among the women. See Table I.

TABLE I.

	Males.	*Females.*
Middle-ear disease alone	33%	24%
Internal-ear disease alone	24%	19%
Both types, together	9%	13%
Normal ears	34%	44%

Age, as was explained earlier, was the cause of a large amount of the internal-ear disease ; but middle-ear lesions were increased among the older patients by only a small proportion. In order to determine how important the question of age was, the proportion of ear disease among those patients up to and including the age of fifty years was compared with the proportion of ear disease among the patients over the age of fifty years. This is well shown in Table II, where the difference between the amounts of internal-ear deafness, present in the two groups, is marked.

TABLE II.

	HALLUCINATED.		NON-HALLUCINATED.	
	50 years and under.	*Over 50 years.*	*50 years and under.*	*Over 50 years.*
Middle-ear disease	53·4%	64·1%	18·2%	15·4%
Internal-ear disease	27·6%	64·1%	5·5%	46·2%
*Both forms	3·4%	38·5%	—	7·8%
Normal ears	22·4%	10·3%	76·3%	46·2%

*Also included under middle and internal-ear disease, above.

The difference between the amounts of internal-ear deafness, both in the hallucinated and the non-hallucinated classes, is almost entirely due to senile changes. Among the non-hallucinated patients a relatively greater increase of internal-ear deafness is present.

The details of the ear diseases that were present in these patients, and the question of treatment, will be dealt with in the future in another paper treating the matter from the otological rather than the mental aspect.

In Table III the different groups of the hallucinated cases are shown together with the relative percentages of normal and pathological aural conditions.

TABLE III.

HALLUCINATED PATIENTS.

	Definitely.	*Probably.*	*Possibly.*
Middle-ear disease	66%	69%	42%
Internal-ear disease	43%	34%	46%
*Both forms	23%	16%	17%
Normal ears	14%	13%	29%

The above figures are correct to the nearest unit.

*Also included under separate headings of middle and internal-ear disease above.

This Table clearly shows that in the possibly hallucinated group the percentage of normal ears is over twice as great as in either of the other two groups; also that this group has a smaller percentage of middle-ear disease. This difference I believe to be due to the probable inclusion in the possibly hallucinated group of some non-hallucinated patients.

Taking the hallucinated cases together, the figures are as given in Table IV.

TABLE IV.

HALLUCINATED PATIENTS.

	Number of cases present in.	*Cases with both forms.*
Middle-ear disease alone	42	61
Internal-ear disease	22	41
Both forms	19	—
Normal ears	17	—

The figures for the class of non-hallucinated patients are strikingly different from the figures just given. This is shown in Table V, where the two classes are compared.

TABLE V.

	HALLUCINATED PATIENTS.	NON-HALLUCINATED PATIENTS.
Middle-ear disease only	42	18
Internal-ear disease only	22	23
Both forms	19	3
Normal ears	17	56

The most striking difference is between the two figures for the normal or healthy ears, which are over thrice as numerous among the non-hallucinated patients as they are among the hallucinated. Also, among the latter middle-ear disease is over twice as common as it is among the former ; while internal-ear disease, unassociated with middle-ear lesions, is very nearly equal in the two groups. These observations strongly suggest that if people who are suffering from mental disease also suffer from middle-ear disease, then they are much more liable to have hallucinations.

The commonest and often the most distressing symptom of middle-ear disease is tinnitus, or noises in the head, which may resemble almost any conceivable sound. Tinnitus was probably present in by far the larger number of the patients with middle-ear disease ; indeed, the majority gave a history of tinnitus. The figures for the definitely hallucinated group were : out of a total of forty-four patients, twenty-eight complained of tinnitus, and of the remaining sixteen the majority had ear conditions which would favour the occurrence of tinnitus.

In my opinion, the origin of a hallucination may be a tinnitus. Thus the peripheral sensation of a tinnitus, occurring in a person suffering from a mental disease, is misinterpreted as a hallucination.

Campbell[1] says with regard to this symptom : " In the sane the purely subjective nature of the sound is soon recognised, although in the first instance it may be thought to proceed from some external object, but to the insane it always appears objective." This I feel is too dogmatic, as some of the patients that I examined were aware of the subjective nature of their tinnitus ; but it is probably quite true of the majority. Earlier in his book Campbell states : " The sound may be heard in one ear only or in both, in the head or outside it, in which latter case it constitutes a hallucination." Gray[2] says : " The subjective sounds are likened by sufferers to almost every conceivable sound in Nature. . . . The patients occasionally state that they hear voices or melodies, though in both these cases there is usually an associated condition of mental instability. . . . As regards position, it is remarkable that in most

bad cases the patient does not locate the trouble in the ear so much as in the head and except at first is not deceived as to their subjective nature."

The evidence in the case of the patients who were unilaterally hallucinated supports the idea that middle-ear disease or tinnitus may give rise to hallucinations.

TABLE VI.

UNILATERALLY HALLUCINATED PATIENTS.

Side on which hallucinations were present.	*Number of patients.*	*Ear condition.*	
Right	8	Middle-ear disease :	
		Right side only	4
		Right side more than left	2
		Both sides apparently equal	1
		Internal-ear disease, right side only	1
Left	2	Middle-ear disease :	
		Left side more than right	1
		Right side more than left	1
Right more than left	2	Middle-ear disease :	
		Right side more than left	1
		Apparently normal ears	1

The association of unilateral hallucinations with unilateral deafness has been pointed out by Church and Peterson[3]; " In unilateral deafness from any cause, hallucinations are liable to occur on the deaf side only ; but a few cases are recorded in which they were on the opposite side." Here the forms of deafness, present in the individual cases, may be the cause of the apparent discrepancy, internal-ear deafness, unassociated with tinnitus, being present in those cases in which the hallucinations were on the opposite side to the affected ear.

The generally accepted explanation of hallucinations is that they are of central origin, are formed of memory pictures, and that therefore they cannot occur in the congenitally deaf, but that they may occur in acquired deafness.

Tinnitus, as far as we know, cannot be present in congenital absolute deafness but may occur in acquired deafness, either where there are islets of hearing left, or in rare cases where the tinnitus is of cortical origin. Stoddart[4], writing of hallucinations, says that when hallucinated, many patients can hardly hear real sounds. Several patients unceasingly hallucinated could not hear

unless shouted at. All of them recovered and were not deaf, when the hallucinations ceased. This statement would also be true of tinnitus. Again, the same writer states: "Exhausted maniacs frequently keep their hands over their ears to favour pleasant auditory hallucinations." How many of us have not held shells to our ears to hear 'the roaring of the sea'?

I hope I have made it clear that hallucinations and tinnitus have many points in common; the most important are:—

(1) Both are liable to occur in middle-ear disease.

(2) In unilateral ear disease, they both tend to occur on the affected side.

(3) Neither is so common in pure internal-ear disease as in mixed or pure middle-ear disease.

I feel justified in stating that in the majority of cases tinnitus is definitely a case of hallucinations, and perhaps a necessary one for their production.

The bulk of the clinical work for this paper was done at Claybury Mental Hospital, and the remainder at the City of London Mental Hospital. For permission to examine patients at Claybury I must express my thanks to the Mental Hospital's Committee of the L.C.C., and to Dr. G. F. Barham, Medical Superintendent of the Mental Hospital. I am also indebted to Dr. G. de M. Rudolf for his advice and assistance.

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Short Notes and Clinical Cases.

A NOTE ON THE PRESENCE OF ENDARTERITIS OBLITERANS IN THE BRAIN OF A MONGOLIAN IMBECILE.

By R. M. STEWART, Leavesden.

The hypothesis that mongolism is a special form of congenital syphilis appears to be gaining ground, particularly in France, but it must be admitted that the pathological evidence for such a view remains extremely scanty. Indeed, with the solitary exception of a report by Babonneix[1] syphilitic lesions in the brain of the mongol do not appear to have been recorded. In the case of Babonneix, in addition to vascular and meningeal changes, a small tumour having the histological features of a gumma was found in the sulcus separating the right prefrontal and postfrontal gyri. To this case I am now able to add a second in which the outstanding feature was a syphilitic affection of the cerebral vessels.

CASE HISTORY.

The patient, an imbecile, age 14, was admitted to Leavesden Mental Hospital on April 28, 1923.

Family History: Both parents had always enjoyed good health and the mother was unable to assign any cause for the birth of a mongol. She had no worries or frights during pregnancy, and no miscarriages or still-births. The family consisted of four children, of whom the patient was the youngest. At the time of his conception the mother was 41 years of age, the father 39 years. The mother came of a long-lived family and on neither side was there any history of insanity, mental deficiency, or epilepsy.

State on admission: A restless mischievous imbecile, unable to dress or wash himself without assistance. Mental age 4 years. Height 4 ft. 2½ in. Weight 3 st. 12½ lbs.

Stated briefly, the signs of mongolism shown by this patient were as follows:—

Head: circumference 19½ in.; small, rounded, and bradycephalic. Palpebral fissures oblique: long eyelashes. Eyes brown: pupils slightly eccentric with normal reactions: fixation-nystagmus.

Ears: small, rounded and hollowed-out.

Nose: short, squat, with triangular-shaped nostrils directed forward.

Cheeks: bright red flush. Well-formed rectilinear eyebrows.

Tongue: not unduly large but fissured in an irregular manner: hypertrophied circumvallate papillæ. Mouth habitually open. Articulation indistinct.

Teeth: carious, irregular and crowded together. Palate high and narrow. Tonsils enlarged. Hair on scalp dry and scanty.

Hands: soft and flabby; incurving of right minimus. Left little finger short and thick with rudimentary nail.

Feet: broad and flat. Large cleft between first and second toes. Plantar line.

Abdomen: large and tumid; umbilical hernia.

Circulation: blueness and coldness of extremities with cuticular mottling; chilblains? No valvular disease of heart. Blood pressure: systolic, 84 mm.; diastolic, 60 mm.

General muscular hypotonia. Sexual development, infantile. Reflexes, normal. Habits, occasionally faulty. Wassermann reaction in the blood, negative. Spinal fluid not examined.

Subsequent History: On the afternoon of February 21, 1926, the patient had a seizure, unattended by loss of consciousness, and within a few hours the right face, arm, and leg became completely paralysed. There was also loss of speech. Temperature, 97° F.; pulse 68; respiration 18.

When seen by me on February 23 there was no facial paralysis but the tongue deviated slightly to the right. There was marked hippus, and complete flaccid paralysis of the right upper limb; the right lower limb was markedly paresed and jerking of the tendon of peroneus tertius was observed. The patient moved the left upper limb freely but with a certain amount of coarse tremor. The left lower limb was unaffected. Sensory functions could not be tested. Reflexes: right abdominal diminished; left, brisk. Plantars: right, extensor response; left, absent. Knee and ankle jerks exaggerated; ankle clonus on right side. No loss of sphincter control.

Voluntary movement returned gradually in the paralysed limb and after the lapse of two months the patient became able to grasp objects very feebly with the right hand and to hold the limb off the bed for a few seconds. The right lower limb showed a considerable return of power, but was unable to support the weight of his body. When examined at the end of three months both extremities showed considerable increase of tone and the right upper limb had assumed the ordinary hemiplegic attitude of adduction, flexion at the elbow and pronation. There was no return of motor speech.

On June 22 the patient acquired bacillary dysentery, to which he succumbed on the eleventh day.

Post-mortem Examination: An autopsy was held eleven hours after death.

The body was that of an undeveloped youth in a poor state of nutrition. Rigor mortis and post-mortem lividity were well marked.

The right upper limb showed contracture at the elbow and the lower limb slight flexure at the knee.

The skull cap was thin and the dura mater adherent to its inner table. The brain weighed 36 ozs. and showed an extensive area of softening in the fore part of the left cerebral hemisphere.

The heart weighed 5 ozs. Myocardium firm and dark red in colour. The mitral valve segments showed a moderate degree of thickening at their free edges but no narrowing of the orifice or recent vegetations. The aorta and larger arteries appeared normal.

Lungs: right, 11 ozs.; left, 13 ozs. No adhesions or evidence of tubercle; congestion of both lower lobes. Peritoneal cavity distended by free gas. Liver 31 ozs. Reduced in size with slight fatty infiltration.

Spleen: 5 ozs. Large, tough and fibrous; dark red in colour.

Kidneys: right, 2½ ozs.; left, 3 ozs. Both reduced in size; capsule thickened and adherent, leaving a slightly granular surface when removed. Cortex narrowed and irregular.

Small intestines: matted together.

Large intestine: much thickening and congestion of mucous membrane at its lower end with numerous large ulcers of irregular shape. One ulcer showed a small perforation.

Examination of Brain : The pia mater was thickened and firmly adherent to the softened convolutions. The cerebral hemispheres were rather rounded, the convolution pattern simple, and the superior temporal convolutions unduly small. The brainstem and cerebellum appeared normal.

The left cerebral hemisphere showed an extensive softening involving all the prefrontal convolutions, the superior, middle, and inferior frontal gyri, the pre- and post-central gyri, except in their lower thirds, part of the superior parietal gyrus, and the gyrus cinguli in its anterior half. The affected convolutions were shrunken, angular, and of varying consistence, some being firmer and some softer than normal brain tissue.

On cutting through the middle of the softened area in the vertical coronal plane it was seen that while the grey matter of the affected convolutions was completely destroyed, the underlying white matter had largely escaped. A small cavity was present beneath the upper end of the postcentral convolution ; elsewhere in the affected region the medullary substance was firm and greyish white in colour.

The basal ganglia were normal.

With the exception of a very small cortical softening situated at the upper extremity of the right postcentral gyrus, the right cerebral hemisphere showed no gross lesion.

Vessels : the basilar and vertebral arteries were both a little dilated and thickened, but the most obvious departure from the normal concerned the anterior and middle cerebral arteries. These were tortuous, irregular in their diameter and of an almost pearly white colour (Fig. 1). They felt extremely firm and when cut across showed a marked narrowing of the lumen. The middle cerebrals were most affected and that on the right side had its lumen almost completely blocked.

Microscopic Examination : A study of the transverse sections of the left middle cerebral artery shows the presence of a marked degree of endarteritis proliferans (Fig. 2.) The inner coat is much thickened by numerous concentric laminæ of fibrous tissue and has narrowed the lumen of the vessel to a considerable extent. In this tissue, which has a fenestrated appearance in certain areas, thin-walled capillaries can be seen. With toluidin blue and azur II the intima stains metachromatically. The internal elastic lamina has undergone new formation and splitting. The middle coat shows little abnormality and proliferative changes in the outer coat are slight. There is little evidence of cellular infiltration in any part of the vessel, the general appearance of the vessel suggesting a slowly developed degeneration of some duration.

The same appearances can also be seen in the minute terminal branches of this artery.

Brain Cortex : At the moment of writing it has only been found possible to examine the cerebral cortex of one area, namely, the right prefrontal region. No changes of a syphilitic character can be found. The pia mater is slightly thickened and œdematous, the nerve-cells show numerical deficiency and immaturity and the larger vessels a slight degree of hyaline-fibroid degeneration.

DISCUSSION.

As malformations of the heart are not uncommon in the mongol it was at first thought that the paralysis in this case might be due to an embolism of the left middle cerebral artery, but the mode of onset of the hemiplegia and the absence of signs of valvular disease militated against the acceptance of this view. The gradual development of paralysis without loss of consciousness was much more in favour of a diagnosis of cerebral thrombosis ; on the other hand, the age of the patient and the negative Wassermann reaction suggested the operation of some other cause, such as encephalitis or brain tumour. Post-mortem examination revealed the presence of some old-standing thickening

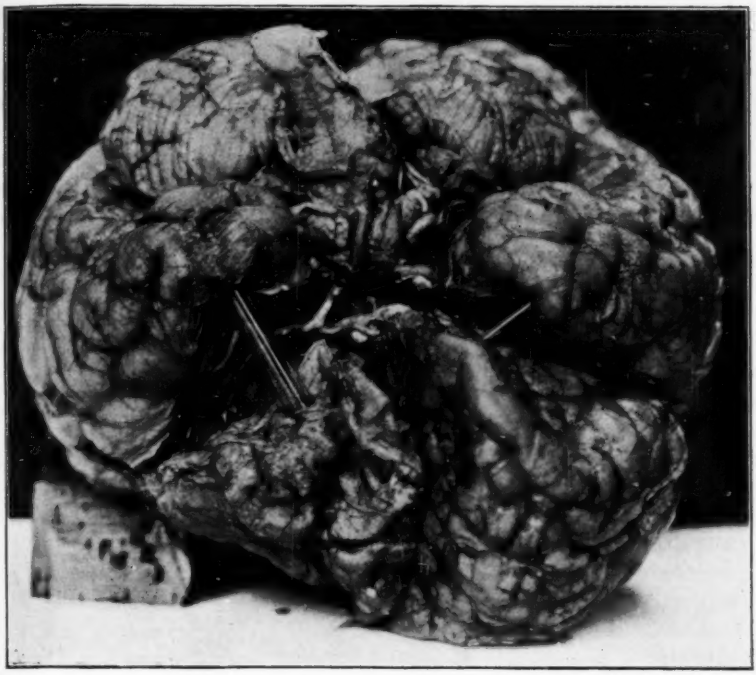

FIG. 1. Brain of mongolian imbecile viewed from the front. The temporal and frontal poles have been separated to expose the diseased arteries. Note softening of the convolutions of the left frontal pole.

FIG. 2. Transverse section of left middle cerebral artery, showing endarteritis proliferans.

of the mitral valve segments but no evidence of recent endocarditis, and these changes were insignificant in comparison with the marked arterial degeneration found in the vessels at the base of the brain.

The lumen of both the left anterior and middle cerebral arteries was almost completely excluded and there can be little doubt that this condition was the immediate cause of the extensive softening in the left hemisphere.

The histological appearances of the diseased arteries were indistinguishable from those seen in syphilitic endarteritis, and the absence of all evidence of tubercle, which is capable of giving rise to a somewhat similar picture, makes it almost certain that we are here dealing with a proliferative endarteritis of syphilitic origin. The site of the vascular degeneration and the presence of cirrhotic changes in the kidneys are consistent with this supposition, while on the other hand the negative Wassermann reaction cannot be regarded as an objection to this view, for it frequently fails to confirm the presence of vascular syphilis in the adult and in young mental defectives displaying the typical physiognomy of congenital syphilis negative reactions are by no means uncommon.

Finally, a word may be said regarding the significance of these changes in relation to the etiology of mongolism. , For the view that syphilis in the parents may give rise to mongolism in the offspring there is a good deal of support on clinical grounds, but the fact that syphilitic lesions are so seldom encountered in post-mortem material is decidedly against this view. In the organs of a cretin which I lately had the opportunity of examining there was abundant evidence of a syphilitic infection, but it would be rash to conclude from their presence that cretinism is therefore a form of congenital syphilis.

All that it is legitimate to say is that by attacking the endocrine organs syphilis may in some cases give rise to those signs of thyroid insufficiency which make up the clinical picture of cretinism, and I am inclined to believe that the syphilitic poison, operating in a similar manner, may occasionally be held responsible for the development of mongolism.

SUMMARY.

A young mongolian imbecile with a negative Wassermann reaction died some months after the development of a right-sided hemiplegia. Examination of his brain showed the presence of a widespread cortical softening in the left cerebral hemisphere, and an obliterative endarteritis of the cerebral arteries, indistinguishable from that caused by syphilis.

REFERENCE.

BABONNEIX, *Arch. de méd. des enf.*, 1909, xii, 499.

Editorial.

VEGETATIVE NEUROLOGY.

PHYSIOLOGY has such a direct bearing on clinical neurology that any new knowledge gained in the researches of the former must of necessity give a fresh impetus to the study of the disorders of function which fall within the domain of the neurologist. For the truth of this assertion we need look no further than to Sherrington's researches on the physiology of co-ordinated movement, without which the interpretation of disorders of motility and of muscle-tone might never have been rescued from the vague conceptions and loose terminology so conspicuous in most of the more early work.

In the field of the sympathetic nervous system our debt to the physiologist is equally great. It was Gaskell who first showed that the slender nerve-fibres connecting the spinal cord and the sympathetic chain subserve the functions of organic life; and it was he who stimulated the researches of other workers in this field, particularly Langley and Anderson, whose brilliant investigations culminated in the revelation of the plan and working of the sympathetic nervous system with a degree of accuracy which has left little for others to add. Yet the clinical bearings of these researches have been but tardily recognised, and it is unfortunate that there has arisen upon this secure physiological basis a maze of highly speculative hypotheses in which the clinician is in some danger of losing his way. Of these hypotheses perhaps no better example can be given than the conception of 'vagotonia' imagined by Eppinger and Hess. They started with the well-established antagonism between the two parts of the autonomic nervous system and endeavoured to prove that there are two corresponding types of individuals in which the normal balances between the sympathetic and the parasympathetic systems are disturbed in one or other direction. They suppose that if the parasympathetic system is unduly irritable a condition of 'vagotonia' is

produced; while a similar increase of irritability in the sympathetic is supposed to produce 'sympathicotonia.' Combination in different degrees of these two hypothetical opposite states is made to explain the origin of a range of symptoms which covers practically the whole field of medicine from asthma to vitiligo.

This speculation seems to be largely based on two assumptions: (1) that the sympathetic is tonically and continuously stimulated by adrenalin; and (2) that the hypothetical substance performs an analogous function in respect of the cranial and sacral autonomic nerve-fibres. It is unfortunate that neither of these two assumptions is supported by unchallenged evidence. Not only is there no satisfactory evidence of a constant secretion by the suprarenal bodies in normal conditions, but the hypothetical hormone 'autonomin' has never had the good fortune to be detected. Moreover, the hypothesis, thus weakly based, is in conflict with established facts, such in particular as those of the innervation of the sweat-glands. This in itself should be sufficient to discredit the whole speculation, yet 'vagotonia' has nevertheless become firmly established in medical terminology, and clinical records are rife with descriptions of 'vagotonic' and 'sympathicotonic' states.

The criticism and rejection of such ill-established speculations must nevertheless not be allowed to blind us to the importance of the vegetative nervous system in the genesis of nervous disease. There is, indeed, abundant evidence to suggest that that system plays an important rôle in the metabolism and economy of the individual. A system which regulates motor and secretory functions in all parts of the body, which regulates organs essential to life, and is intimately related to and connected with the glands of internal secretion, can hardly be supposed to escape the more morbid influences which attack the central nervous system itself. The contraction of blood-vessels, with its resulting effect upon the outpouring of sweat, the quickening of the pulse, and the dilatation of the pupil, are all manifestations of an emotional excitement which finds a ready explanation in involvement of sympathetic nerve-cells; but while the facts concerning the interrelationship of emotional factors and mechanistic alterations of the vegetative nervous system are incontrovertible, the evidence that certain nervous diseases are due to structural or functional changes of the sympathetic system is of the most vague and fragmentary

character and continues to be largely a repetition of the intelligent guesswork to be found in monographs as far back as the seventies of last century. Epilepsy, migraine, exophthalmic goitre, the myopathies, and many other diseases, have all been attributed to disease of the sympathetic nervous system ; but where are the pathological data for such assumptions ?

It is surely a singular reflection that while the pathology of the cerebrospinal nervous system has been dealt with in a manner so exhaustive that the smallest nerve-cell or fibre may be said to have its clinical significance, the morbid anatomy of the sympathetic nervous system remains an unwritten chapter.

It is true that tumours arising from sympathetic nerve-cells have been accorded some attention, and that the effects of traumatic lesions of the main sympathetic chain are given a time-honoured place in textbooks of neurology. But concerning morbid changes in the larger visceral sympathetic system little or nothing is to be found there or elsewhere. Scattered throughout neurological literature are references to congestion, round-celled infiltration, and nerve-cell atrophy of the larger plexuses ; but one may search it in vain for any attempt to bring into something like systematic order the significance of these changes in the production of disease.

There are many factors to account for the barrenness of this field. In part we may note the failure of experimental transection of ganglia or nerve-fibres of the visceral sympathetic system to produce symptoms endowed with the obtrusive character of those produced by similar lesions of the brain and spinal cord ; in part we may note the technical difficulties which attach to the study of degeneration in the sympathetic nerve-trunks and ganglia. Many of the latter are placed in most inaccessible positions, or are so scattered in the wilds of the body that they are difficult to find. None the less, in spite of these technical difficulties, we have here a large, important, and scarcely explored field in the mapping of which the neuropathologist might well expend a little of the energy which he devotes to other and possibly more recondite problems. The future of knowledge in this field gives promise that such labour would not be without its reward.

Abstracts.

Neurology.

NEURO-ANATOMY AND NEUROPHYSIOLOGY.

[180] **Experiments on the hypothalamus and cerebral peduncle** (Experimenteller Beitrag zum Studium des Hypothalamus und der Hirnschenkel).—D'Abundo. *Arb. a.d. neurol. Inst. Wien*, 1926, xxvii, 229.

In this series of experiments no attempt was made to produce exact lesions but injuries were effected in the subthalamic and peduncular regions of numerous animals and the results were compared.

The animals used were new-born kittens. In these very young animals little or no glial reaction occurred but cysts formed at the site of the injury and the tracts which degenerated in consequence of the lesion simply disappeared. Through a rectangular incision in the posterior parietal region a scalpel was passed ventral-wards till it reached bone and then turned through a right angle.

The symptoms that followed this manœuvre were always the same; with a left-sided injury, turning of the head to the right, choreiform movements which lasted about a week, and later stiffness, noticeable especially when the animals walked. In two animals blindness occurred on the left side. The animals lived about three months and it was seen that in comparison with controls they were deficient in growth.

Examination of the brains showed that in all cases the regio hypothalamica and the substantia nigra were severely injured and in most cases the injury extended beyond these parts. The resulting degeneration involved:

(*a*) the pyramids;
(*b*) the corticopontine system;
(*c*) the lemniscus medialis;
(*d*) the stratum intermedium of the substantia nigra;
(*e*) the brachium conjunctivum of the opposite side.

The hypothalamic commissure was intact and the posterior commissure almost so.

The atrophy of the corticopontine system apparently spread beyond the pons to the cerebellum and in consequence the stratum complexum of the latter was almost entirely absent and the stratum superficiale had suffered badly, only the stratum profundum being relatively intact.

The degeneration of the lemniscus extended even to the arcuate fibres coming from the posterior column nuclei of the opposite side. In the pons some fibres could be traced to the red nucleus and seemed to come from Forel's decussation.

The degeneration of the stratum intermedium of the substantia nigra seems to indicate that it derives from structures situated above. A small bundle of fibres lying dorsolaterally in the substantia nigra was intact and could be traced into the fillet.

The superior cerebellar peduncle of the non-operated (right) side of the brain was always a little smaller than that of the left, although the red nucleus was intact ; the corticothalamocerebellar system must therefore be of considerable size in the cat.

The rotation of the head to the right is regarded as a reflex consequence of the loss of proprioceptive stimuli resulting from the destruction of the lemniscus.

The choreiform movements were manifest even in animals in which the red nucleus was undamaged. As regards the rigidity which appeared after some days, it is emphasised that the red nucleus has not the influence in its production which it has been considered to have. J. P. M.

NEUROPATHOLOGY.

[181] **The pathology of dystonia and dyskinesia** (Zur Pathologie dystonisch-dyskinetische Prozesse).—BERNIS. *Arb. a.d. neurol. Inst. Wien*, 1926, xxvii, 338.

IN this paper clinical and short pathological descriptions are given of seven cases, all presenting some disturbance of tone or movement, but, apart from that, so diverse that they do not form any homogeneous group. Cases 1, 2 and 3 were cases of generalised rigidity in elderly artiosclerotic subjects, and inflammatory as well as simple degenerative changes were found in the brains. Case 4 was clinically similar to paralysis agitans, the subject being a woman 72 years of age : the pathological changes preponderated in the substantia nigra. Case 5 is the most interesting ; it was one of choreiform movements involving the left arm (especially the hand) and face, and occasionally affecting the left leg, in a man of 75. In the brain an old hæmorrhage was found in the head of the right caudate nucleus and the adjacent part of the putamen. This sharply localised lesion was evidently responsible for the choreiform movements which the patient exhibited. Its position seems to lend some support to the view that different parts of the caudate nucleus are associated with the control of movement in corresponding parts of the body.

The seventh case was one of Little's disease and the pathological changes found were primarily cortical. J. P. M.

[182] **Friedreich's ataxia.**—T. M. BARRETT. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 28.

A DESCRIPTION of the pathological changes in two cases of Friedreich's ataxia. The patients were full-blooded negro brothers ; the elder died three year

after the onset of the illness and his case was reported by Lloyd and Newcomer in 1921. The disease in the younger brother lasted seven years.

The author has nothing new to add to the pathology of this disease, but his analysis of the voluminous literature should prove useful to other workers in this field. R. M. S.

[183] **Tuberculoma en plaque.**—I. PARDEE and L. C. KNOX. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 231.

TUBERCULOSIS within the cranial cavity assumes one of four forms, the most frequent being a disseminated leptomeningitis, which proves invariably fatal within a few weeks. Of the other three forms, the first consists of a solitary tubercle, originating in the pia, but extending into the cortex and simulating in appearance a chronic pyogenic abscess. The second group is made up of more or less discrete tubercles scattered along the branches of the pial vessels, especially in the neighbourhood of the Rolandic and Sylvian fissures. The third type, so-called *méningite en plaque tuberculeuse* is seen only in adults and bears a close resemblance to carcinoma or endothelioma. In a case of this sort studied over a period of five years by the authors the course of the patient's illness was characterised by the definite Jacksonian quality of the convulsions, ushered in first by sensory symptoms and then a definite tonic spasm. Apparently because of the very superficial cortical involvement, disturbance of reflex action was slight and variable.

Necropsy disclosed the presence of a large flat plaque, 9 cm. long and 8 cm. wide, firmly adherent to the dura mater, and covering a large area in the left frontoparietal region. No calcified or softened areas were discovered, the mass appearing quite avascular with no evidence of old hæmorrhage. Microscopically, it showed a dense hyaline fibrous reticulum, containing innumerable tubercles. These varied in character and age from fibrous ones near the surface to typical active tuberculous lesions with a caseous matrix, Langhans giant cells, and a peripheral border of endothelial and round cells. The round cells were especially numerous in the deeper layers of the pia, and in some sections a distinct separation of it from the cortex was evident, showing the tuberculous granulation tissue almost entirely limited to the meninges. Within the sulci there were fewer tubercles, and the exudative reaction was moderate. In sections from the thickest median portion there was no line of demarcation, and the cortex was extensively invaded. No tubercle bacilli were found.

R. M. S.

[184] **Pathological and anatomical investigations on postencephalitic Parkinsonism** (Pathologisch-anatomische Untersuchungen über den encephalitischen Parkinsonismus).—HOHMAN. *Arb. a.d. neurol. Inst. Wien*, 1926, xxvii, 1.

THIS is a record of the pathological investigation of the brains of eleven cases of postencephalitic Parkinsonism, together with a short review of some of the previous German and French work on the subject.

Widespread cellular degeneration was present. It was of different types but most often fatty. The substantia nigra was most severely affected and to the degeneration in this area the Parkinsonian rigidity is attributed. In all parts the glial reaction to the degeneration of nerve cells and fibres was slight. The cellular infiltration was usually only perivascular but in some cases there was diffuse infiltration with lymphocytes and plasma-cells and small glial cells. The process is regarded as one of chronic progressive inflammation.

Placing the structures in order of the degree of involvement the list is: substantia nigra, putamen-caudate, globus pallidus, midbrain ganglia, nucleus dentatus, cerebral cortex, medulla, cord. The affection is so widespread that any localisation of function from the symptoms can only be very tentative.

J. P. M.

[185] **General paralysis: The histopathology of the basal ganglia.**—T. L. Houlton. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 214.

The author describes nerve-cell degeneration of a chronic type in the basal ganglia of four advanced cases of general paralysis, and suggests that this is concerned in the origin of the speech disturbance, the expressionless facies and the fine tremors seen in this disease. As, however, degenerative changes of the types described by the author are present in every part of the nervous system in general paralysis deductions of this sort can have no value.

R. M. S.

[186] **The pathological anatomy of general paralysis after malaria treatment** (Zur pathologischen Anatomie der Malaria-behandelten progressiven Paralyse).—M. Gurewitsch. *Zeit. f.d.g. Neur. u. Psych.*, 1926, cv, 314.

The results of malarial treatment of general paralysis differ from those of other forms of treatment, not only in being followed by a larger proportion of remissions, but also by the exacerbations which are apt to be the immediate sequelæ of the treatment. These exacerbations are associated with symptoms unusual in general paralysis, such as hallucinations and delirium. Side by side with this clinical change in the type of the disease there are alterations in the pathological anatomy. Sträussler and Koskinas have shown in previous papers that during a remission after malarial treatment the cortical changes were so slight that without knowledge of the previous condition of the patient the diagnosis would have been impossible. This reduction of the pathological changes to a minimum has occasionally been observed in natural remissions which were unusually prolonged, but whereas in natural remission it is an exception after malarial treatment it appears to be the rule.

In cases terminating fatally during treatment or during exacerbations immediately following treatment, there was a quite different pathological picture, showing exacerbation of all the pathological processes, enormous infiltration of the finest vessels, larger numbers of rod-cells, etc. In addition,

unusual pictures such as the appearance of plasma-cells outside the perivascular spaces, and of mononuclear phagocytes in the pia mater were found. Occasionally small 'knots' were seen which the authors considered to be miliary gummata.

Gerstmann, confirming these observations, interpreted the exacerbation of the processes as the expression of a fiercer attack by the mesodermal elements against the spirochætes. Kirschbaum's work confirmed that of the others. He found malarial granulomata in cases which had been treated with tropical malaria.

Gurewitsch has examined 12 new cases in which death occurred at periods varying from 13 days to nine months after the beginning of malarial treatment. Of these cases two (dying 20 and 32 days after the beginning of treatment) showed the usual pathological picture in a severe form. In the other ten the picture was atypical. In some, lymphocytes greatly outnumbered plasma-cells in the perivascular infiltrations; in others, structures resembling miliary gummata were found. In still others there were localised softenings in the cortex; collections of spirochætes in their neighbourhood suggested that they were areas of very acute syphilitic encephalitis. The degeneration of plasma-cells and the enormous quantity of degeneration products and pigment round the vessels suggested that the cortex had begun to free itself from the paralytic process, but had not completed the work. In three cases the frontal cortex had been cleared of disease, which, however, was still rampant in the basal ganglia or the temporal lobe. When localised in the basal ganglia it was associated with katatonic symptoms and when in the temporal lobe with hallucinations.

The author concludes that the changes found in general paralysis after malarial treatment indicate an exacerbation of the fight between the mesodermal elements and the spirochæte—a fight which may end in the illness running a more severe course, but which sometimes results in a cure.

J. G. GREENFIELD.

[187] **Experimental studies in parasyphilis** (Experimentelle Studien zum Metaluesproblem).—HOFF and POLLAK. *Jahrb. f. Psychiat. u. Neur.*, 1925, xliv, 281.

IN a previous series of experiments Hoff and Pollak had found that the injection of the cerebrospinal fluid from cases of general paralysis into the thecæ of dogs gave rise to changes in the cerebrospinal fluid of the animals, such that henceforth their fluids gave all the reactions of general paralytic fluids. In the series of experiments described in this paper fluids from cases of tabes were similarly injected into the thecæ of dogs. No permanent changes in the fluids of the animals resulted; whether the cases of tabes were active or appeared stationary the results of the experiments were uniformly negative.

J. P. M.

SENSORIMOTOR NEUROLOGY.

[188] **The significance of extrapyramidal mechanisms for the translation of the movement-idea into action** (Über die Bedeutung extrapyramidaler Apparate für die Umsetzung des Bewegungsentwurfes in die Handlung). —POLLAK and SCHILDER. *Jahrb. f. Psychiat. u. Neur.*, 1925, xiv, 37.

THIS paper contains some keen analysis of the factors involved in apraxia. It deals with a case in which the clinical findings were complicated and peculiar.

(1) There was a pronounced intention-tremor which, however, changed later into coarse shaking. The patient when asked to perform a movement stopped before reaching the objective, sometimes even at a grotesque distance from it. But the exhaustion of the movement before attaining the object was not so pronounced in movements directed towards external objects as in those which were directed towards his own body. When the movement aborted in this way the patient was markedly confused.

(2) The patient stiffened frequently in attitudes and was often unable without further stimulus to change a posture once taken up. He could not produce the necessary change of innervation. In other ways the initiation of movements (and also of speech) was seen to have become very difficult and delayed.

(3) Mistakes due to pure apraxia such as changing the object-point, or missing it, did not occur except for this liability to come to a dead stop.

(4) There was a pronounced tendency to adventitious motor phenomena consisting partly of tremors, partly of tonic effects.

The author's conception is that the patient had a fully developed idea of what he wished to do, but that he was unable to initiate the action ; not that there was any defect in the actual effector mechanism, such as exists in ideokinetic apraxia (in which the fault is not in the initiation but in the control of the movement).

In the case in question the pathological changes in the brain were somewhat diffuse but were most severe in the frontal cortex (including the precentral gyrus). There was considerable destruction of elements also in the dentate nucleus of the cerebellum. Changes of moderate severity in the basal ganglia completed the findings. The area for propioceptive sensation in the cortex was intact.

The peculiar symptoms are ascribed chiefly to the damage to the frontal lobe. In Liepmann's ideokinetic type of apraxia there is an inability to translate into action the data which are provided to form the movement-idea ; the resulting apraxia is comparable to paraphasia. In Kleist's innervation apraxia the defect is in the mechanisms which subserve the movement. The type of apraxia described in this paper is intermediate between these.

J. P. M.

[189] **Congenital regressive rigidity** (Rigidité congenitale regréssive de Mme. Cécile Vogt : Etat marbré du strié).—PHILIPPE, VAN BOGAERT and SWEERTS. *Jour. de Neurol. et de Psychiat.*, 1927, xxvii, 100.

ALTHOUGH this paper is only a clinical report it is of much interest and value. The patient is now a girl nine years of age. A fortnight after her birth it was apparent to her mother that she had unusual movements of the limbs and head. The arms flexed intermittently so that the hands struck the shoulders, the legs, held, baby-fashion, up in the air, were turned inwards and outwards, the head was rolled from side to side and pushed backwards ; disordered movements affected the face and eyes. The child was in a state of continuous motor instability. The mother was struck also by the absence of muscular resistance ; between the spasms the limbs were flaccid, the head fell back. There was in addition an absence of all initiative for movement ; up till the age of three years the child never made any attempt to sit up, to walk or to grasp an object. She did not seem to take any notice of her surroundings and did not speak. She had to be fed and mastication seemed difficult. When she was about three years old the choreiform movements diminished, and the child began to show some signs of intelligence and recognition. Between the ages of four and seven she seemed to develop normally in intelligence ; speech was very difficult ; the choreiform movements ceased and there came on a remarkable stiffness, greatly increased by emotion. At the age of six she began to have a tremor of the right upper limb.

At the age of nine her condition is as follows :—when she lies on her back the lower limbs are strongly extended, the feet in the equinovarus position with permanent extension of the great toes ; the right arm is usually extended, the left is flexed, abducted and pronated, the hand being held at the level of the shoulder. The trunk tends to be curved towards the right and the face and eyes are turned to that side. The left arm if moved returns by jerky movements to the original posture. There is a slight irregular tremor of the hands and there are athetotic movements of the feet and toes. Hypertonia is most pronounced in the flexors of the upper limbs. In the abdominal and thoracic musculature there is a definite hypotonia.

The hypertonus is much increased by emotion and is affected even by the presence of a stranger. When the patient is alone voluntary movements are sudden and rapid, but before strangers they are slow and interrupted. The patient is unable to sit up when lying and when sitting is unable to maintain the sitting posture without support. She can make a few steps if held up, the legs taking up a posture of strong extension with the feet in equinovarus. There are great difficulties in articulation, mastication and deglutition. There are no signs of pyramidal involvement and no cerebellar symptoms. The symptoms are said to be showing slow but steady regression.

The case is presented as one of the ' état marbré ' of the corpus striatum

described by Mme. Vogt and Oppenheim. Their cases had the following clinical characters :—

(1) The disease was congenital but did not clearly reveal itself till the subjects tried to speak or walk ; there was a tendency towards amelioration.

(2) The most striking symptoms were spasms and movements of a choreic, or more often, athetoid type ; these were replaced or sometimes accompanied later by akinesia without any true paralysis.

(3) Difficulties in articulation, phonation and mastication were the rule.

J. P. M.

[190] **A note on the incidence of neurosyphilis among coloured races.**—O. A. R. Berkeley-Hill. *Ind. Med. Gaz.*, 1926, lxi, 57.

As a result of a questionnaire the following information was gained. In Assam syphilitic lesions are less severe than in England and no parasyphilitic ones are reported. It is thought that those born locally who survive malaria in youth and contract syphilis later in life are to some degree immunised against the toxins of the *spironema pallidum*. In the Central provinces of India general paralysis and tabes are very rare. As regard the Poona district it is said that though general paralysis exists among the Indians, it is nothing like so common as it is among Europeans. At Lahore between the years 1907 and 1921 three cases of general paralysis were found, of which in only one was the patient an Indian. Madras reports only one case of general paralysis since 1897 out of a total of 1,243 asylum admissions. At Nagpur no case was recorded in the last 20 years. This is also stated of Bengal though it is believed that such cases do undoubtedly exist among Indians. The venereal specialist in the Western Command states that the incidence of general paralysis and tabes among Indians is very small. He reports in six years two cases of tabes and five of general paralysis. At the Lunatic Asylum at Rangoon from 1917 there were admitted 11 cases of general paralysis ; of these 7 were Burmese, 2 Chinese, 1 European and 1 Indian. Up to the outbreak of war in 1914 general paralysis among the coloured population of Egypt was very rare, but since a good many cases came to be noted. The incidence of general paralysis among the natives of South Africa is about 1 per cent. of the total insane patients. Tabes is rare and syphilitic affections of the brain and meninges are not so common among natives as among Europeans. The Medical Department at Colombo stated that general paralysis and tabes were probably as common among natives as among Europeans. In Nigeria probably half a dozen cases of general paralysis have occurred among natives in the last 13 years. Tabes, too, is said to be extremely rare. As regards the Federated Malay States the cases of general paralysis are almost invariably Chinese, a few Japanese, but no Malays. Out of 414 consecutive cases admitted into the Corozal Hospital at Panama between 1917 and 1918, there were 14 cases of general paralysis among the coloured and 10 among

the white admissions. At one time it was believed that the coloured race was immune to general paralysis, but this was probably due to a failure to recognize the disorder in the coloured on account of the lack of grandiose delusions. The disorder in the coloured usually manifests itself in simple dementia.

C. S. R.

[191] **General paralysis among the North American Indians.**—G. S. Adams and Loe Kanner. *Amer. Jour. of Psychiat.*, 1927, vi, 125.

Syphilis among the Indians is very common, according to the statements of a great number of authors. The question arises why dementia paralytica as a generally acknowledged postsyphilitic disease is so extremely rare in these races as compared with the conditions present in the population of the United States or of other countries. Considering the fact that syphilis becomes milder as it grows older with the generations of a race, the authors feel that the relative absence of general paralysis among the Indians can be explained only by the old age of syphilis in the race. This admits of two important conclusions. The one is that the acceptance of the importation of syphilis from America to Europe at the time of the discovery of the new world gains a greater credence and, provided that the authors' deductions are right, even seems to be proved to full extent. The other conclusion is that if after a long period of time the spirochæte loses the power of producing general paralysis in that race where it has prevailed long enough, the prospects are that also the white race might finally gain a similar resistance, so that in the future general paralysis might decrease and eventually disappear among its members.

C. S. R.

[192] **A note on type of onset in relation to clinical type in general paralysis.**—Henry A. Bunker, Jr. *Amer. Jour. of Psychiat.*, 1927, vi, 199.

Out of a series of 74 cases of general paralysis, the earliest onset of the disease was marked in 57 by abnormality in the emotional sphere of one of two forms: irritability (in 29), or a seclusive and apathetic type of reaction (in 15); in 13 cases there occurred first the one and then the other as an early symptom. Little correlation appeared to exist between the type of onset, in this sense, and the clinical type of general paralysis which later developed, save with regard to the 'manic' cases of the fully developed disease; for the patients with an 'irritable' onset contributed 30 per cent. of the 'manic' cases as compared with 19 per cent. of the latter in the group as a whole, while 100 per cent. of these cases had an 'irritable' rather than 'a seclusive' type of onset when either of these forms of emotional alteration had a place among the earliest changes observed. In this respect the expansive cases did not differ from the group as a whole. On the part of the simple dementing cases there was, of the two, a slight tendency towards seclusiveness rather than irritability as an initial or early symptom. Loss of weight, increased tendency to sleep, and perhaps also forgetfulness, when these appeared among the earliest symptoms

noted, were without significance with regard to the clinical type of paresis which subsequently developed. Of 11 patients who very early exhibited speech defect, all but one fell later into the category of simple dementing cases.

C. S. R.

[193] **Thrombosis of the spinal vessels in sudden syphilitic paraplegia.**—Mon-Fah Chung. *Arch. of Neurol. and Psychiat.*, 1927, xvi, 761. Chung records two cases of sudden syphilitic paraplegia. The first was a young Chinaman who on admission showed complete flaccid paralysis of both lower limbs with sensory disturbances, loss of reflexes, and laboratory evidence of syphilis. The cord showed extensive softening at the level of the second thoracic segment and an arterial thrombosis in the neighbourhood of the posterior septum of the cord; the meninges showed evidence of an acute inflammatory process.

The second case was that of a young man with a history of an acute onset of paraplegia and retention of urine. He was found to have a complete transverse lesion of the cord with sensory and reflex disturbances. Death occurred from intercurrent infection after a few weeks in hospital. Necropsy revealed periphlebitis and endophlebitis with thrombosis of the pial vessels on the dorsal and lateral aspects of the third thoracic segment, resulting in softening of the nerve tissue and secondary changes above and below the lesion. In addition there was also meningeal inflammation below the lesion, but no such changes in the membranes above.

The author draws attention to the tendency for the meningeal reaction to be most marked below the lesion in the lower portion of the cord, but his explanation that "just as there is a generalised trophic change elsewhere in the body below the lesion, so also the meninges of the cord caudad to the thrombotic vessels share in the general vasomotor and trophic disturbances and decreased resistance" is not very enlightening. R. M. S.

[194] **Adhesive spinal arachnoiditis simulating spinal cord tumour.**—Byron Stookey. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 151.

In certain cases with the clinical picture and course of spinal cord tumour, operation discloses the presence of adhesions of the arachnoid to the other meninges. These adhesions vary from rather discrete fine bands to adherent processes completely surrounding the spinal cord and producing obstruction of the subarachnoid space. Their extent is also extremely variable. In some instances small, circumscribed, definitely limited adhesions may be found, while in others a more or less extensive process may exist reaching far beyond any feasible operative relief. In the early history of spinal cord surgery the condition was described under various headings, such as circumscribed serous spinal meningitis or chronic spinal meningitis, but the most satisfactory designation is perhaps arachnoiditis adhesiva circumscripta spinalis, although since no blood vessels normally exist in the arachnoid it is a misnomer,

strictly speaking, to use the term arachnoiditis. In the course of the last three years Stookey has encountered ten examples of this disease, whereas the records of the New York Neurological Institute for the thirteen preceeding years have shown only two cases whose operative description would permit them to be brought into this category.

Although Horsley considered gonorrhœal infection to be responsible, the etiological factors are not clear, and it is doubtful whether the condition is a primary one, or merely a secondary manifestation of disease of the spinal cord. The importance of adhesive bands in the production of symptoms of cord compression is made clear by a consideration of the rhythmic movements of the spinal cord during respiration. With each respiratory excursion, there is a dorsoventral movement of the spinal cord—an excursion of approximately 5 mm. in each direction, throughout the length of the cord, greater in the cervical and upper dorsal regions. If adherent bands are present, the cord is fixed at the points of attachment, while above and below it moves. Thus, with each respiration, angulation at the fixed segment occurs. This in itself is perhaps trivial if of short duration, but when constant and continued over a long period of time—in some instances for years—disturbances in cord conduction can eventually occur. In the more complete forms of arachnoid adhesions, the weight of the impounded column of cerebrospinal fluid is an additional factor, though this is only seldom found.

With regard to diagnosis, arachnoid adhesions are to be suspected when a prolonged progressive history of spinal cord signs is presented, but the most valuable differential sign is obtained by manometric studies of the cerebrospinal fluid. Partial or complete block may be found, and it is interesting to note that in the author's series no increase in the total protein content or xanthochromia was found, possibly because in this condition venous stasis is not present. The absence of increase in the total protein content is of interest, indicating that in all probability the total protein content of the perivascular fluid is not greatly in excess of the cerebrospinal fluid. In some cases sneezing or coughing may cause pain, due to the impact of the fluid against an abnormally fixed cord. Vertebral tenderness is of little diagnostic value, and the appearance and evolution of subjective and objective sensory changes differ very little from those found in spinal cord tumours. Motor disturbances are, on the whole, more prominent than the sensory, and their evolution follows closely that seen in spinal cord tumours. The results of operation are dependent on the cephalocaudal extent of the adhesions rather than on their density or transverse extent. When the process is extensive and involves a large number of segments beyond a feasible exploration, the operative results are naturally poor, since adhesions are broken only in a small area and many are left, but when the adhesions are limited, and can be brought within operative approach, the results in some instances are as brilliant as those which follow the removal of cord tumours. R. M. S.

[195] **Irresistible mastication during epidemic encephalitis.**—P. J. Zentay. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 239.

During the fifth week of a typical attack of epidemic encephalitis a boy, age 13, started to suck his lips to such a degree that the left side of the cheek was at times sucked in between the teeth. When the cheek was brought between the teeth, violent chewing motions occurred, and to prevent injury a padded tongue depressor had to be held between the teeth. Despite this and other precautions both the left cheek and tongue were badly injured. A vulcanite-aluminium splint proved effective in preventing injury to the cheeks but seemed to provoke more violent chewing movements, so that a number of teeth were actually broken off. The attacks were usually worse during the night and each lasted several hours. After continuing for two weeks they gradually ceased.

To account for the unusual disturbances observed in this case the author concludes that it is necessary to assume the existence of a subcortical centre controlling the succession of automatic innervations of the masticatory muscles.

R. M. S.

[196] **Tuberculoma of the brain.**—W. P. Van Wagenen. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 57.

In a paper chiefly devoted to the surgical aspects of tuberculoma of the brain the author draws attention to the comparative rarity of this type of tumour in young people; it is far less common than subtentorial glioma. Among a series of 1,000 verified tumours in the surgical clinic of Harvey Cushing, only fourteen, or 1.4 per cent., have been proved to be tuberculous granulomas, whereas a figure in the neighbourhood of 50 per cent. represents the estimate of the earlier writers on the subject. There are reported in the literature to date certainly not more than fifty cases in which the extirpation of a tuberculoma of the brain has been attempted. Permanent recoveries have been exceedingly few, and regarded from a conservative point of view, it would appear that operations have been chiefly valuable as palliative procedures. Although the temptation will always be strong to remove an easily accessible solitary tubercle, and although occasional permanent recoveries have been reported, as a curative measure extirpation of the lesion seems, in most cases, to be of questionable value.

R. M. S.

[197] **Differential diagnosis of tumours primarily pineal and primarily pontile.**—G. Horrax. *Arch. of Neurol. and Psychiat.*, 1927, xvii, 179.

In a study and comparison of thirty verified cases of tumours of the brainstem it was found that there were two distinct groups: (1) those involving the upper portion of the midbrain in the region of the corpora quadrigemina, and (2) those involving the pons. The former were all tumours arising from the pineal body, and pressed on, but did not invade, the underlying structures. The latter arose within the pons and involved it diffusely.

In respect of differential criteria, the most important feature, as far as the patients' subjective complaints were concerned, was the fact that the onset in all of the pineal group began with pressure symptoms, whereas in the pontine group the first notice of trouble was usually from some oculomotor difficulty, pressure symptoms developing as a rule much later. It may be said, therefore, that when the differential diagnosis as between the two situations is in doubt, a history starting with pressure symptoms is strong evidence in favour of a pineal tumour ; whereas, conversely, the cases which begin in other ways, such as with diplopia, squint, numbness or weakness of one side, facial palsy and the like, are almost certainly pontine lesions. When difficulty in hearing existed, it was always recognised subjectively as bilateral by the pineal group, and always referred to a single ear by the pontine. Objectively, the outstanding feature was the loss of associated upward movement of the eyeballs in a large number of the pineal group, this being true of none in the pontine.

Pseudocerebellar signs were present and outspoken in 90 per cent. of the total thirty patients. R. M. S.

[198] **Erb's lateral sclerosis** (Sclérose latérale paratypique d'Erb).—Van Boggaert and Ley. *Jour. de Neurol. et de Psychiat.*, 1927, xxvii, 93.

This paper comprises clinical and pathological reports of a case. The patient was 44 years of age at the time of his death, and symptoms had begun eleven years previously with stiffness in the lower limbs ; eight years later he had to give up work on account of stiffness in the arm and neck. Before death the case had become one of paraplegia in flexion, and there was slight generalised amyotrophy of the lower limbs ; incontinence of urine had been present for some months.

The pathological examination showed an intense degeneration of the pyramidal tracts from the upper part of the pons downwards ; there was also some degeneration of the lateral and anterior portions of the cord.

Neither the clinical nor the pathological accounts seem to justify the authors' contention that the case was one of pure pyramidal sclerosis.

J. P. M.

PROGNOSIS AND TREATMENT.

[199] **The use of sedatives, tonics, endocrines, etc., in the reeducational training treatment of the epileptic.**—L. Pierce Clark. *Med. Jour. and Rec.*, 1926, cxxiv, 205.

What are the outstanding principles which underlie the physical treatment of the epileptic ? The attempt to treat the disease process itself based upon some suppositious theory of its causation, visceral, endocrinic or metabolic and the like, is one. Inasmuch as these theories rest upon the slenderest foundations they ought to disappear from daily or even occasional use. The great majority of the remedies rest upon a more secure rationale if not upon a more successful

one, viz., upon the basis of suppression or sedation of the disease process as expressed in the fit and its congeners. If one postulates that it is a cerebral affection cortical in origin and that the actual tissue lesion is a form of marginal gliosis either primary or secondary, and that the fits are in some way a periodical expression of this enduring process in the cortex, what use can the sedatives be in such a problem? No one pretends to say that bromides can favourably influence a cortical gliosis. When, then, should this remedy be given? Because we are groping in the dark and have found a temporary means of magically suppressing the periodic fits, we imagine we have rid the patient of the disease-process. While we may not clearly say that bromides increase the disease, we do know that so far as we can comprehend the nature of the disorder the symptoms of the bromides are similar in their action to those of the disease process itself and it stands to reason that their administration is really more harmful than good. It is still the prevalent belief that the fit in itself induces degeneration and that the bromides in temporarily checking the frequency of the fit really keep back deterioration. Aside from the use of bromides for diagnostic or emergency purposes they should be entirely discarded in the treatment of epilepsy. Their chief or alleged attribute is that of quieting and tranquillizing the patient so that the stress of life is lessened. How much better this can be accomplished by understanding the epileptic's individual problem, his opportunities and his handicaps and thus help him to revisualize them and make his peace from within naturally and not by a chemical substitute. The maximum of drug advantage is secured if they are employed as adjuvants to an otherwise more embracing therapy. The greatest and surest permanent benefits are obtained when sedation is held to the minimum and supportive and restorative measures are mainly employed. Even then the vanishing role of drugs in the treatment of the epileptic is broadly stayed, for the dawn of a better system of therapeutics is well on its way, indicated in the more dynamic aspects of treating the epileptic organism *in toto*. C. S. R.

[200] **Postencephalitic behaviour disorders in boys and their management in hospital.**—Earl D. Bond and G. E. Partridge. *Amer. Jour. of Psychiat.*, 1926, vi, 25.

The behaviour syndrome presented in the postencephalitic child has some unique features and the picture is not quite duplicated in any other disease. Its nearest relative appears to be the cerebral trauma case. The changes are mainly associated with some degree of hyperkinesis but the opposite condition may be found, with slowing of interests, querulousness, babyishness, often associated with more or less marked Parkinsonian phenomena. The writers interest themselves mainly in the former type which presents many behaviour problems. Most occur in what may be called the middle age of childhood. Younger children are more likely to show changes in intelligence, while in adults we find the physical types, and a few psychotic conditions. Whether the

behaviour picture of postencephalitis is to be regarded as really specific to that disease, is not quite clear. A review of the literature on the subject is given. There seem to be four main types of explanation of the behaviour reactions related to (1) correlation with localized lesions; (2) toxic effects or changes of function incident to rehabilitation of tissues or chronic processes; (3) indirect effects of lesions or pathological processes, such as unbalance of functions; (4) psychic and social factors, effects of prolonged convalescence, interruption of education. These are discussed and cases presented at some length. It is concluded: That the behaviour difficulties of these children are directly related to the attack of epidemic encephalitis; that the acute attack was predominantly of the oculo-lethargic type; that there is some direct relation between severity of the physical injuries and the behaviour difficulties; that a group of behaviour cases has been manageable as a unit, that as a whole it has made fair progress in education, and that behaviour has improved much.

These children have responded well to simple methods of disciplining. The educational side of treatment is very important; teaching must be adapted somewhat to special needs. Some habits and symptoms that are very troublesome in the ordinary conditions of home and school are easily managed in the hospital, or even tend to drop out without interference.

There can be little doubt, although there is no absolute proof in the absence of actual demonstration of pathology, that in the behaviour syndrome of encephalitis we are dealing with a condition which has an organic basis; and it seems reasonable to suppose that the pathological changes are the factors that give to this syndrome its distinctive colouring. Yet it seems impossible to formulate any precise correlation between a neural change and a behaviour pattern. There is no reason to suppose that cortical lesions occur that have anything to do with the development of the behaviour reactions. No part of the nervous system seems to be immune from attack, but the general occurrence of lesions in the basal ganglia, and the coincidence of the reaction-type as deviations in motor and particularly instinctive reactions with the physiological patterns of known basal ganglia activities, makes it improbable that there is any important pathology elsewhere in the nervous system to be considered in the majority of the cases. Treatment is discussed and it is pointed out that low intelligence is a serious handicap, since the educative side is what is most depended upon in reconstruction of the behaviour. It is thought that there is a field in some cases for the application of psychoanalysis, in part to symptoms that are more directly an outcome of the injury itself, and in part to cases in which the original personality deviations have been accentuated by the disease.

C. S. R.

[201] **Chronic epidemic encephalitis.**—P. K. McCowan and J. S. Harris. *Jour. of Ment. Sci.*, 1927, lxxiii, 40.

Hyoscine is of undoubted value in the Parkinsonism of chronic encephalitis; its action is a specific one; its value is objectively demonstrable, amongst other methods, by its effect on the blood-sugar curve, which is made to approximate to the normal curve. It is important to remember that the action of hyoscine is only temporary, but its prolonged use does not lead to tolerance or any deleterious effects. Though in the majority of cases the full benefit of hyoscine can only be obtained by hypodermic administration, there is no doubt that in many cases considerable benefit follows its oral exhibition. It is, without doubt, much superior to belladonna or stramonium. The 'functional' element in this disease is possibly related to lesions in or around the basal ganglia, and it has been suggested that analogous lesions may account for similar symptoms in hysteria, chorea, Wilson's disease, etc. Although no recovery can be claimed at present for the use of such drugs as tryparsamide and argotropin in the treatment of chronic encephalitis, it is hoped that time will show that they have been successful in the attack on the encephalitic virus as evidenced by the prevention of any further progress of the disease. Oral hygiene is an important subsidiary line of treatment.

C. S. R.

ENDOCRINOLOGY.

[202] **Hypophyseal cachexia** (La cachéxie dite hypophysaire).—C. I. Urechia and N. Elekes. *L'Encéphale*, 1926, xxi, 352.

The authors review the literature of hypophyseal cachexia and quote shortly thirty new cases in which the tuber cinereum was studied microscopically. In the majority of the cases severe cachexia was present, but except for this they departed from the classical clinical picture in many particulars. Cushing and Paulesco after removal of the pituitary body observed rapid progressive wasting, muscular tremor, asthenia, apathy, hypothermia, slowing of pulse and respiration, arterial hypotension, hyposensibility to adrenalin, and loss of hair. These symptoms the present authors attribute to a lesion of the tuber cinereum rather than of the pituitary body itself. They discuss the relationship of this region of the brain to the sympathetic and endocrine system, but do not bring forward any new facts. In many of their cases they found severe lesions in the paraventricular and supra-optic nuclei of the tuber cinereum, such as capillary hæmorrhages, miliary gummata and syphilitic infiltrations, and they are inclined to the view that these lesions played a considerable part in producing the clinical symptoms.

J. G. G.

[203] **Endocrine therapy and the psychoses.**—CHARLES B. MOLONY. *Jour. of Ment. Sci.*, 1927, lxxiii, 64.

No case of mental disorder, more particularly if it supervenes at puberty or the menopause, however advanced or hopeless, should be considered incurable until disordered endocrine function has been definitely excluded, whether this be done by the absence of characteristic symptoms or by the failure of response to organotherapy. Endocrine therapy fulfils a very important and useful role in the treatment of psychoses in carefully selected cases. Compound ovarian extract, in private practice, will obviate the necessity for certification in many cases. Polyglandular dyscrasias are the rule in the endocrine psychoses, and pluriglandular therapy should give the highest percentage of satisfactory results. The fact that physiologists have not yet succeeded in isolating the hormones or chalones of certain of the ductless glands, and therefore cannot *prove*, by experiments on animals, whether these hormones or chalones are or are not absorbed unaltered from the digestive tract, is no justification for our denying to our patients the benefits clinically proved to accrue from the oral administration of extracts of these endocrine organs.

C. S. R.

Psychopathology.

PSYCHOLOGY.

[204] **Measuring introversion and extroversion.**—EDNA HEIDBREDER. *Jour. Abn. Soc. Psychol.*, 1926, xxi, 120.

IN an article by Max Freyd on "Introverts and Extroverts" there is given a collection of 54 specific traits which are commonly regarded by psychologists as characteristic of introversion, and the opposites of which may be taken as indicative of extroversion. This has suggested to the author the possibility and desirability of submitting some of the questions of introversion and extroversion to an experimental test. Freyd's list is used as a rating scale and the question is asked: What information can be gained about introversion and extroversion by applying this scale to a group of normal individuals as an instrument of measurement? And also: Do the traits in question actually distinguish between introverts and extroverts? From this preliminary study the results seems to justify the following statements. Introverts and extroverts are not distinct types but belong to a single mixed type of which introversion and extroversion are the extremes. The central tendency of the group shows an appreciable deviation towards extroversion according to the scale used. This fact suggests the importance of discovering the central tendency of various groups of normal individuals as a means of determining the point on the scale which best represents normality. It also suggests that the normal reaction is not necessarily a perfect balance between introversion and extroversion, but a tendency in one direction or the other. Individuals tend to rate themselves as more introverted than their associates judge them to be. On the basis of a statistical analysis, Freyd's list is justified as an instrument for distinguishing between introverts and extroverts. C. S. R.

[205] **Subject matter and motivation of children's dreams.**—PHYLLIS BLANCHARD. *Jour. Abn. Soc. Psychol.*, 1926, xxi, 24.

IN a Child Guidance Clinic 230 children were questioned concerning their dreams. Twelve could not remember having had any dreams at all. Two hundred and eighteen said they had dreamt recently but were unable to describe them. The rest reported 315 dreams which are here discussed. Dreams of parents were amongst those most frequently occurring. The death-wish toward the parent which has been given such a significant place in Freudian psychology appeared frankly in only four although eight more represented the parents as "gone away." Otherwise the dreams picture the parents in some pleasant role. There were several in which dead parents were believed to be alive again. Next to parents, animals were the most frequent subjects. Lions, tigers, bears, apes, and snakes were the most popular. It seemed more logical to interpret these animal dreams in the light of the child's everyday experiences. In many instances the child was able to trace his dream to some unpleasant experience with an animal or to vicarious adventure through the films or stories. Forty-one

dreams were listed under the heading of fear dreams. Other common dream subjects were play activities, falling, robbers, death, relatives other than parents, opposite sex, supernatural beings (ghosts, witches, fairies, angels), riches and fire. The dreams of death showed the dreamer as being killed or killing himself, or were concerned with the death of someone else (outside the family circle). Dreams of the opposite sex varied from those of kissing or marriage to those of more definitely sexual nature. Only one of the 189 children reporting dreams described any of marked symbolic nature. With the exception of this one case, the motives assigned to the dreams and dreamers were those which seemed obvious from the child's own associations or from the information obtained by the social and psychiatric studies. By far the largest number were expressions of wishes or fears. Sex did not appear openly in the motivation to any marked degree. Adler's interpretation of the dream as a wish fulfilment along lines of compensation for a feeling of inferiority appeared in the manifest-content of only 1.3 per cent. Those resulting from mental conflicts were more frequent (9.5 per cent.) Six per cent. were recognized by the children as repetitions of episodes which they had witnessed on the films or read in books. Probably many others had this origin, the children simply being unable to recall the connection. From the viewpoint of the clinician, dreams are of assistance in understanding the child's difficulties, predicting his behaviour, and bringing to bear upon him influences which may change his conduct. Sometimes the dream indicates a solution for the child's mental conflict which proves to be a practical suggestion and can be carried out successfully. C. S. R.

[206] **Character and abnormal psychology.**—W. S. Taylor. *Jour. Abn. Soc. Psychol.*, 1926, xxi, 85.

From the psychological point of view, what character is, in terms of mechanisms, is important. The following broad definition is submitted: We may define character in terms of degree of ethically effective organization of all the forces of an individual. In other words, the more ethically approvable the integration of an individual, the 'better' his character. A suggestible hysteric may have such a fluid personality that he does not possess any very effective organization. Organization involves some degree of inhibition. On the other hand, a paranoiac, or an obsessed person, may have very definite organization of his inner forces; he may accomplish great things. Yet such organization may not be ethically effective; it may be directed at unworthy objects, or may be incapable of adapting to improved methods, or of recognizing that new conditions require new virtues. To be ethically worthy, an individual's integration must be good for the life of individuals in a community. The chief function of this definition is psychologically to distinguish character from temperament, mood, intelligence, and other aspects of personality. And it is clear that this general conception of character points directly to many of the specific conceptions of abnormal psychology, as well as of general psychology, as mechanisms of explanation and control. C. S. R.

NEUROSES AND PSYCHONEUROSES.

[207] **Foreign psychoneuroses: Amok and Latah in Malays** (Psychonévroses exotiques: l'Amok et le Lattah des Malais).—H. CODET. *Progrès méd.*, 1927, vii, 241.

PSYCHOPATHIC types with analogous causes are often different in various races. Amok is a temporary paroxysmal state with an impulse to kill. It is impossible to foresee its onset in a Malay and it suddenly appears without any known prodromata. The subject who is seized with an attack pursues and makes onslaughts upon all whom he meets, utilising any weapon within his reach. This violent outbreak is well-known to the population and as soon as it is announced that someone is "running Amok," the tam-tam is beaten and everyone hides himself as quickly as possible. The victim of Amok spreads terror, for he is insensible to physical pain and inaccessible to any intimidation. The Malays maintain that he who runs Amok "sees the tiger" and that his excitement arises from that. It is not easy to know much of the progress and termination of the attack as European physicians seldom have the opportunity of making such observations and it is rarely that a case is admitted to an asylum. Some cases, however, have been studied by Van Loon of Batavia. Usually after some hours the patient quietens and falls into a more or less prolonged stupor from which he awakens with no memory of the attack. He appears then to be just as he was before, with no special pathological symptom. Through its characteristics, Amok has been thought possibly to be an epileptic equivalent. Among Malay epileptics, however, Amok is not specially observed and no epileptic history or signs are found in sufferers from the latter disease. In many cases, it has been proved that in the height of the attack malaria was active and in others that there was a febrile state of uncertain origin. It seems reasonable to look upon Amok as a sudden and acute confusional attack with terrifying hallucinations and comparable with an alcoholic delirium. The fact that, as local tradition has it, the victim 'sees a tiger' which is his constant natural enemy, would be some presumption in favour of visual hallucinations. It is stated, too, that those who frequent those regions where malaria is specially rife well know these confusional attacks with frequent aggressive reactions.

Latah is a state equally paroxysmal but much less dramatic. It appears in 98 per cent. of cases in women between 35 and 50. They, too, are usually not of much intelligence and live in contact with Europeans as domestic servants. The Latah victim suddenly becomes agitated and shows an irresistible impulse to copy all the gestures, however absurd, that she sees performed. The attack is accompanied by a naive babble expressing desire to be like their masters in every way. Frequently obscenities and erotic gesticulations are superadded. After some hours the attack disappears, the Malay resuming her usual devoted attitude. In spite of these inconveniences the servants subject to Latah are not considered a nuisance and their services are appreciated. It is regarded

as somewhat difficult to place the disorder nosologically. We note explosive manifestations of an affect ordinarily suppressed. Often the attack appears after an erotic dream and is perhaps the attempt to live out such a dream.

C. S. R.

[208] **A case of dual personality.**—Henry Herbert Goddard. *Jour. Abn. Soc. Psychol.*, 1926, xxi, 170.

After a history and description of a case, that of a young woman of 19 years of age, the author concludes that there are two factors in dual personality: (1) a divided mental life, and (2) a nervous system deficient in energy. Without these two factors, we might have an abnormal manifestation, but hardly a duality. Had the young woman's life not been of such a character as to drive her to attempt to escape from reality by imagining a happier and freer existence, there would not have been the two phases to be dissociated. On the other hand had she been in vigorous mental health with a nervous system full of energy, she might have gone on dreaming of a happier existence but never losing contact with real life. There is probably more or less of a causal connection between the two factors, for a vigorous nervous system would have enabled her to face the actual conditions with more courage, with the result that she would have more effectively controlled them and there would not have been the necessity for leading the imaginary life. It is regarded as worthy of note that the patient had unusually good intelligence. This is probably not accidental. Prince's case of Miss Beauchamp was likewise that of a woman of high intelligence. This would seem to be essential, that there might be enough imagination to create the ideal world in which the person of secondary personality lives. One cannot conceive of a feebleminded person ever developing a dual personality.

C. S. R.

[209] **A case of conversion hysteria, with some remarks on treatment by the method of abreaction.**—R. S. Gibson. *Practitioner*, 1926, cxvii, 387.

An account is given of a case of conversion hysteria treated by abreaction. The patient, a girl of 19, had three or four major hysterical fits at each menstruation, since at the age of 17 she had been pushed off a pier by a rough crowd and had been nearly drowned. She had complete amnesia for this, but the memory for it was recovered under hypnosis and caused much emotional excitement, and the suggestion was made that she would still remember it on waking. Since then she has had no more fits.

Discussing the cause of the cure, the author regards as the essential factor the abolition of the amnesia and the consequent reintegration of the patient's mind, and denies the truth of the theory often propounded that it is the freeing of pent-up emotion, the existence of which as an energising force he regards as questionable. He emphasises the importance in his case of the patient's mind being reintegrated by her remembering the incidents at the root of the neurosis as part of her personal experience.

E. Casson.

[210] **Neurasthenia and inverted maternal instinct.**—W. AIRLIE. *Practitioner*, 1926, cxvii, 382.

THE author discusses neurasthenia, the clinical picture of which he regards as the result of inefficient suprarenal activity added to thyroid hyperactivity. Its differential diagnosis from inverted maternal instinct is examined, where a childless woman bestows on herself and her own health all the thought, interest, and assiduous care she would have given to a child. For the latter condition he recommends the adoption of a child, as he points out that it never occurs in teachers or nurses.

E. CASSON.

PSYCHOSES.

[211] **Observations on the prison psychoses.**—H. P. T. YOUNG. *Jour. of Ment. Sci.*, 1927, lxxiii, 80.

AMONG about 3,000 convicts who were placed under mental observation, there were 19 cases in which disordered states of a prison type were observed. Of these none can be said to have conformed in all respects with the conditions it seemed necessary to adopt in defining a true 'prison psychosis.' Five of them were certified insane, the remainder being discharged from the prison hospital after periods of observation varying from a few weeks to several months. The condition which has been described appears to form a connecting link between the anxiety neuroses of a traumatic origin on the one hand and systematized delusional insanity on the other, bordering on the former more especially in first offenders who have temporarily lost their capacity to realise the full responsibility for their crimes, and on the latter in recidivists whose antisocial feelings are more strongly developed, and whose facility in projecting their guilt appears to be more pronounced. The recovery from the disorder on discharge resembles in some cases the solution of a conflict in persons who have suffered from nervous symptoms as a result of an accident, when their claim for damages is settled by monetary compensation. In the more long-standing ones, however, the querulant habit may be too firmly established to permit of this solution. The development of the symptoms is not rapid as a rule, a period of six to eighteen months being usually required. The majority of the cases were in either the third or fourth decade. From a reference to the insanity and age statistics it would appear that the age at which the greatest number were found at the prison (Parkhurst) is between the 25th and 35th years, with the peak at the 30th year, rapidly rising to and falling from this point.

Proof of the existence of a specific action of prison environment on the mental condition of long-term prisoners would suggest that there should be some relation between the liability to mental disorder and the increasing length of imprisonment, and, in consequence, that the prevalence of prison psychoses would be greater in aged recidivists. This does not appear to be the case,

however, for an analysis of the mental condition of 50 aged convicts does not reveal the presence of any disorder apart from the mental changes which may accompany old age in ordinary circumstances. It must be admitted, however, that no final conclusion can be drawn from the present state of a group composed of only 50 men. Septic foci were rarely absent in persons who developed morbid mental states while in prison. In no case was a positive Wassermann test found. The absence of the prison type of disorder among the tubercular was noticeable. Convicts who are compelled, by reason of some physical defect, to work at the less productive or interesting tasks are, on the whole, more liable to develop morbid states of mind than are those whose tasks more closely approximate to the work to which their class is accustomed outside prison. The question of endocrine imbalance as a possible factor was considered, but routine physical examination revealed no gross changes in the thyroid gland. Finally an enquiry into the presence or absence of a history of alcoholism was made in each case. Excessive drinking in one or both parents was not uncommonly found—a fact which could only be regarded as a possible cause of any psychopathic tendencies in the subject. C. S. R.

[212] **A study of delirium.**—Lloyd H. Ziegler. *Amer. Jour. of Psychiat.*, 1927, vi, 105.

Of 91 patients having 130 instances of delirium, 64 remembered some descriptive facts about them. The character of these deliriums coincided fairly well with the descriptions in the literature. Typhoid fever, pneumonia, and influenza were mostly the exciting causes. No individual differences in the deliriums in these three diseases were observed in the cases studied. Though most of them occurred in those under 20 years of age, a goodly number came in later years. The severest tended to occur at earlier ages. As regards sex, they were about equally divided between males and females. Over half of all deliriums were mild. The disease most frequently associated with the severest types was typhoid fever. There was a marked tendency for deliriums to be alike in the same person even with different diseases, though in some cases they were quite dissimilar. This was especially true if they occurred in the same person at widely varying ages. Since delirium can be induced by drugs as well as by infections and toxæmias of disease, it seems apparent that the inciting agent only serves to release certain behaviour-tendencies that are part and parcel of the personality. This serves to explain their protean manifestations. C. S. R.

[213] **A study of psychoses occurring in relation to childbirth.**—Elizabeth Kilpatrick and Harry M. Tiebout. *Amer. Jour. of Psychiat.*, 1927, vi, 145.

From the writers' series of 72 cases, no psychosis peculiar to childbirth was found. The various types occurring at this time appeared to be essentially the same as psychoses occurring at other times. In their series 32 per cent.

were deliria, 50 per cent. manic-depressive psychoses, 14 per cent. dementia præcox, 4 per cent. psychoneuroses. Fifty-two per cent. of the deliria were without discoverable toxic factors. The duration of any toxic cases was longer than expected. Seventy-five per cent. of the manic-depressive psychoses were depressed; 17 per cent. manic; 8 per cent. circular. Among the depressions were a number with the element of confusion which was found to be more frequent in those with an accompanying physical factor. The prognosis did not seem to be altered. All the dementia præcox group were of paranoid reaction. The authors conclude that childbearing presents many problems of a physical and psychical nature which play a definite role in the production of psychoses. They do not of themselves, however, determine the type of reaction but merely act as exciting or precipitating agents in the onset of the illness.

C. S. R.

[214] **Postoperative psychosis.**—GILBERT BROWN. *Med. Jour. of Australia* 1925, xii, 457.

THE author gives a summary of cases reported previously and reports two of his own.

The first was that of a woman of 39, who developed acute confusion, with delusions of poisoning, two days after an operation on account of asthma, consisting in resection of the nasal septum, with removal of the anterior end of the middle turbinate and some ethmoidal cells, under ethyl chloride and ethanesal anæsthetic. She recovered in two months.

The second was that of a man of 28, operated on for acute appendicitis under ether anæsthesia, who developed acute excitement, with the delusion that he was God, twelve days after operation. He recovered in a few months.

E. CASSON.

[215] **The cyanosis of dementia præcox: a study of gas relationships of the blood, with clinical observations.**—LILLIAN SEGAL and LELAND E. HINSIE. *Amer. Jour. Med. Sci.* 1926, clxxi, 727.

THE authors give the result of a study of the blood of 14 young male dementia præcox patients and two controls. They found in cases of cyanosis that: (1) The oxygen capacity was normal. (2) The oxygen content was below normal and the blood showed a consequent arterial unsaturation. (3) The oxygen consumption was high. (4) The cyanosis therefore appeared to be caused by (*a*) incomplete oxidation of blood in the lungs; (*b*) increased reduction of oxyhæmoglobin to reduce hæmoglobin in the peripheral capillaries. (5) The mean capillary unsaturation approached the low limit for cyanosis, as in influenza and pneumonia. (6) The red blood cell count showed a slight but uniform increase in the corpuscles of venous over arterial blood. The patients' heart-rate showed little increase after exercise.

E. CASSON.

[216] **Psychogalvanic studies in schizophrenia.**—H. C. Syz. *Arch. of Neurol. and Psychiat.*, 1927, xvi, 747.

In a study of the psychogalvanic reaction in schizophrenia it was found that spontaneous and disconnected galvanic waves, present in only a few normal persons, occurred in almost all paranoid schizophrenic patients, and also in a fair number of catatonic and depressed patients. Paranoid schizophrenic patients, in spite of their high total of galvanic waves, gave few reactions connected with outside stimuli, but many waves which appeared spontaneously, quite independent of environmental influences. This does not point to a lowered emotivity in these patients but rather to the fact that their emotional fluctuations are directed by a type of stimuli other than that active in the normal individual; it is an experimental corroboration of the clinical observation that these persons have the tendency to react (emotionally and in their behaviour) more to endogenously arising stimuli and less to environmental situations. In depressed states the galvanic records correspond to what might be expected from a consideration of the clinical picture—an increase of the spontaneous waves and a consistent regularity in the shape of both the galvanic and the respiratory curves. R. M. S.

[217] **An interpretation of mental symptoms of dementia præcox.**—Arthur Ernest Davies. *Jour. Abn. Soc. Psychol.*, 1926, xxi 284.

The total picture of the mental life of dementia præcox is that of a mind that has allowed the emotional disturbances that normally accompany the common failures of life to become the central and controlling motive of its thought and action. The ordinary give-and-take of life brings to light weaknesses in the psychophysical 'make-up' of these patients, and the form in which these weaknesses manifest themselves is that of a wounded amour propre. The disease from the psychological point of view consists in the series of efforts that individuals with the characteristic psychophysical disposition make to re-establish themselves in the community of their fellows. But they do this in the wrong way. The cure of their wounded self-feeling is for them the chief concern of life. Beneath the protean forms that the disease assumes, there is always to be found the false emphasis on objective facts and a false direction of personal activities that have their basis in the one-sided importance that these patients attach to their own self-feeling. With the progress of the disease, the ways in which the fundamental emotional change is expressed are found in the characteristic symptomatology. The patient endeavours to construct life in a way that will be least damaging to the feelings of his own importance. There is a progressive withdrawal from a larger and larger number of contacts with the world around him, and an attempt is made to organize those that remain in a manner satisfactory to himself. Because the chief necessity is the reinstatement of his positive self-feeling, and because the method he adopts leads him to disregard the correlative claims or rights of other people, he meets with less and less

success, and finally falls into quite nonsocial expressions of himself in speech (incoherence, verbigeration, echolalia), action (mannerisms, automatisms, negativism), and ideas (hallucinations, delusions). Throughout, the intellect, which is not at first seriously involved, is reacted upon by the narrowing of the patient's contacts with the life about him. It undergoes a progressive deterioration as the result of the conjoint operation of the two factors: the insufficiency of the affective motive, and the inadequacy of the objective material with which it works. The psychological treatment should consist in helping the patient to maintain as large a number as possible of points of vital contact with his environment, and in fostering an enlargement of his emotional life so that these newer experiences can be permanently assimilated to the other elements of his personality. C. S. R.

PSYCHOPATHOLOGY.

[218] **A note on the Wasserman reaction in the blood-serum of male admissions to Hanwell Mental Hospital.**—G. A. Lilly and E. L. Hopkins. *Jour. of Ment. Sci.*, 1927, lxxiii, 108.

In a series of 412 cases admitted in two years, the blood-serum was tested, and of these, 105, or 25.48 per cent., were found to be positive. This shows the distinctly high incidence of syphilis of 1 in every 4 admissions. An analysis of these cases shows several interesting features. On admission, 55 cases, although actively syphilitic, did not present signs suggestive of general paralysis. Later a certain number developed sufficiently to be recognized as general paralysis—a recognition hastened by the fact that their sera were known to be positive. It was evident that syphilis occurred in eight types of mental disorder, presenting symptoms in no way suggestive of syphilis. Of the 105 admissions with positive sera, no less than 21, or 20 per cent., were diagnosed on admission as confusional insanity. This was to be expected in view of the prevalence of a confusional state in the earlier stages of general paralysis—an expectation borne out by further observation of these confusional cases, in which 11 were diagnosed ultimately as general paralysis. The immediate recognition of the presence of syphilis enabled early antisyphilitic treatment to be carried out, with excellent results in many cases. The knowledge that syphilis is the causative factor has a definite bearing upon the prognosis, as it was found that when the cerebrospinal fluid was negative, antisyphilitic treatment was often successful. Four cases with a clinical picture of general paralysis on admission were found to have negative sera. The 55 cases with positive sera on admission, but without symptoms suggestive of general paralysis, were diagnosed under eight forms of mental disorder as: delusional, 8; confusional, 21; melancholia, 4; senile dementia, 7; gross brain lesion, 3; mania (recent), 6; dementia præcox, 3; epilepsy, 3—55 cases.

C. S. R.

[219] **The calcium content of serum in mental invalids.**—Edward Armstrong. *Jour. of Ment. Sci.*, 1927, lxxiii, 111.

It is evident that there is neither a high nor a low calcium content for any particular psychosis. Owing to the onset of spasm in parathyroidectomized animals with low calcium content, it was considered that epilepsy would show a fall in calcium content, but this expectation was not realised. It was found that the average for manic and depressed cases was the same, but there were no agitated cases of melancholia in the series. The lowest average was in general paresis, and the highest in paranoia, but more would have to be done to warrant any conclusion being drawn. The figures below 9.0 mgrm. per 100 c.c. applied to two cases of primary dementia, one case of epilepsy with dementia, and one case of general paresis with mania. The only case above 11.0 mgrm. per 100 c.c. was a case of paranoia. Briefly the results show that the calcium content of blood-serum in mental cases lies within normal limits, and that a high or low content is not diagnostic of any specific condition.

C. S. R.

[220] **Crime and its causes.**—William D. Tait. *Jour. Abn. Soc. Psychol.*, 1926, xxi, 234.

To establish the thesis that mental defects and psychopathic phenomena are prolific sources of crime, we are oftentimes asked to consider court records and statistics. Question as to the validity of this inference at once arises. It is a tenable position to hold that court records are not a true or reliable index of crime in a community. It is indeed conceivable that the mental weakling commits crime, but the point is that he is caught on far more frequent occasions than his more intelligent confrere in the ways of evil. The investigations of those surveying the field impartially would indicate that there is quite as much crime and immorality among the more intelligent as among the less intelligent. We are therefore forced further afield to seek the reasons why crime is committed. Every crime has a motive or motives either expressed or repressed and, in the latter case, to be detected only by analysis. It may happen that the criminal himself is not aware of the motive. Many juvenile crimes are the result of the desire to emulate and there appears to be small doubt but that uncontrolled instinctive urgings are the mainsprings of crime. This explanation is neither an excuse nor a palliation. Crime should not be treated more leniently because it is explained. As age increases the various 'urges' and motives change and at the same time become more complicated. Crime seems, in some way or other, to solve a problem and, at the time, is apparently the only way out of a difficulty. As the misdemeanour of the juvenile is the result of instinctive urgings, so the first approach towards its understanding must come by the same route. The conception of studying, and above all, of dealing with juveniles from the viewpoint of psychopathology is not good scientific procedure. Our knowledge of social problems will not be increased, nor will our

skill in dealing with them become greater, if we persist in regarding them as purely pathological. For those juveniles and adults who will not respond to the milk of human kindness, drastic treatment is the only adequate prescription. The crime motive-complex must be broken up, and punishment of a severe nature in relation to the crime is the only hope looking towards a proper response. The cure, then, if cure it can be called from the standpoint of society, with regard to those who cannot or will not do well for society by reason of their inability to profit by experience in the form of punishment, is their elimination in the case of serious crime. Why for example should the insane murderer go free and the sane murderer be hanged ? They should both disappear. As far as environment counts the foundations of all true social reform is to be found in home discipline, not in psychopathological investigations into child life.

C. S. R.

[221] **Child murder and insanity.**—J. STANLEY HOPWOOD. *Jour. of Ment. Sci.*, 1927, lxxiii, 95.

INFANTICIDE is commoner in insanity during lactation than in puerperal insanity or the insanity of pregnancy. Exhaustion psychosis is the most frequent form of insanity (75.5 per cent.). An age of under 30 is a point in favour of a good prognosis. Insanity and subsequent infanticide are much more frequent in multiparæ than in primiparæ. Previous attacks of insanity have a definite bearing on the prognosis, the chances of recovery being much lessened when there has been a previous attack. Little can be said with regard to heredity, owing to the difficulty of obtaining a reliable history. Suicidal ideas are common, being present in about 60 per cent. of the cases. In many cases the primary idea is suicide, and the homicide is secondary. The presence of the suicidal impulse is not a contraindication of a good prognosis. Alcohol as a causative factor has but little importance in the insanities connected with childbirth and infanticide. Epilepsy is not common in these cases, having no greater percentage than obtains in the whole insane population. Amenorrhœa is a frequent symptom, and usually persists for some months. An early return of the menses is a point in favour of ultimate recovery. Amnesia is frequently present. It is commonest in the exhaustion psychoses, and provided that it is not permanent, it is a point in favour of a good prognosis. Amnesia is of very rare occurrence in dementia præcox. Simulated amnesia is seldom found in the insanities of childbirth with infanticide.

C. S. R.

PROGNOSIS AND TREATMENT.

[222] **Prognosis in schizophrenia.**—EDWARD A. STRECKER and GORDON F. WILLEY. *Jour. of Ment. Sci.*, 1927, lxxiii, 9.

THIRTY-EIGHT cases of dementia præcox which recovered were analysed from the standpoint of potential prognostic indications occurring either before or during the attack of mental disease. The chief considerations were race,

history (both familial and personal), personality, prepsychotic somatic state, precipitating situation, onset, and the psychic and physical phenomena of the psychosis itself. Racial or ancestral traits do not determine to any significant extent the presence of symptoms which bear a malignant aspect. Heredity occasionally exerts an indirect effect, and the previous existence of chronic mental disease in a parent may apparently create an environment from which a benign psychosis in the offspring may take some of its unfavourable symptomatological aspects. A close study of the personality is often fruitful and furnishes helpful prognostic guides. Abnormality of personality in itself is not pure evidence of chronicity, and a psychosis which seems prognostically unfavourable may be given, falsely, such an appearance by determining prepsychotic idiosyncrasies of character. If the psychosis is in some sense an evolution of such peculiarities and no deterioration of personality is implied, the outlook is not necessarily hopeless. Rarely sensory deprivation due to organic disease may influence the behaviour during the psychosis so that it seems bizarre and malignant, unrelated to affect.

If the precipitating situation is innately significant and the psychotic content reflects its component factors, then the psychosis may be benign even though the symptoms in themselves have a somewhat sinister aspect. The transition from sanity to mental disease is an extremely critical period. Inhibition is lessened and extraneous, accidental happenings may be deeply impressed and later elaborated into apparently malignant symptoms. Other things being equal, an acute stormy onset is a favourable sign. An affective display which is markedly at variance with the remainder of the psychotic content or a notable insufficiency of affect ordinarily constitutes a criterion of chronicity. It is important to distinguish between the psychosis in which the emotional disharmony or paucity results from the unfolding of a fundamental disease process, and the one in which the apparent lack of alignment and emotional inadequacy are determined by independent factors not concerned with the basic mechanism of the psychosis. Toxicity or exhaustion may complicate a benign psychosis and impart to it a deteriorating guise. Both the prepsychotic life and the psychosis should be carefully scrutinized for evidence of infection or bodily depletion. Catatonia is not peculiar to dementia præcox. It may be a response to toxicity, and it then admits of a hopeful prognosis. Stupor, in itself, does not furnish a safe prognostic indicator, and it must always be considered in its relations to the entire psychosis. When the psychosis as a total reaction constitutes an escape and psychotic correction of serious circumstances in life which have brought the patient to an impasse, then the prognosis may be favourable even though the clinical aspects are not promising. Careful study, not only of the actual mental symptoms, but of all the antecedent factors which may have been influential in moulding or complicating the expression of the psychosis and their proper evaluation, should tend to reduce the margin of prognostic error. C. S. R.

[223] **Treatment by prolonged sleep in psychiatry.**—O. A. R. Berkeley-Hill. *Ind. Med. Gaz.*, 1926, lxi, 383.

The treatment of certain types of mental disorder by artificial sleep maintained over a considerable period—8 to 10 days—was first introduced in 1920. Many observers since have published their results and the drug ' somnifene ' (a mixture of the diethylamine salt of diethyl-barbituric acid and allyl-isopropyl-barbituric acid) has been most used. Klaesi has reported well on the results obtained by prolonged narcosis in certain types of schizophrenia. Mueller concludes that the most suitable types of mental disorder for this treatment are : 1. Agitated and excited states, especially those in which there is marked anxiety. 2. Acute hallucinatory conditions. 3. Schizophrenics showing marked negativism. 4. Patients with volitional or ideational stereotypies. Three patients in the Ranchi European Mental Hospital were treated in this way. The therapeutic effect produced was not, on the whole, particularly gratifying, except in one case in which a remarkable confirmation was obtained of the suspicions that had been formed as to the main etiological factor of the disorder. This was a case of an obsessional neurosis and under the influence of somnifene there was disclosed what could not otherwise be obtained in the anamnesis. The other two cases were a subacute mania associated with general paralysis, and an acute agitated melancholia with anxiety symptoms of extreme intensity. The details of the treatment and the precautions to be observed are sketched. Only one of the three patients shewed any untoward symptom through this treatment. The temperature on the third day rose to 104° F. and there were signs of collapse. The injections were stopped, the temperature fell the following day, and the treatment was continued. The first case was treated for 10 days and slept for 160 hours ; the second case was treated for 11 days and slept 177 hours, 55 minutes ; and the third slept 130 hours, 20 minutes, under treatment for about 8 days. Although prolongation of this form of treatment for more than ten days is probably attended with some risk, there is no reason against employing it for shorter periods. C. S. R.

Reviews and Notices of Books.

Aphasia and Kindred Disorders of Speech.—By HENRY HEAD. Cambridge University Press. 1926. Vol. I, pp. xvi + 549; Vol. II, pp. xxxiii + 430. Price £3 3s. 0d. net.

IT would be quite impossible to overestimate the importance of these volumes. No short review such as the following can serve as more than the briefest of notices of their contents. For the psychologist they mark an epoch in the study of language and thought in relation to cerebral functioning.

In Volume I, after a brilliant historical introduction dealing especially with the work of Gall, Bouillaud, Broca, Hughlings Jackson, Marie, von Monakow, Liepmann, etc., the author proceeds to a description of his own methods of examination in dealing with aphasic cases, with full accounts of the special psychological tests he devised and applied for the accurate estimation of the various kinds of disturbances of "symbolic formulation and expression" in which aphasia consists.

He then explains his own well-known classification of these disturbances—verbal, syntactical, nominal, semantic, with detailed illustrations of each type of defect. He finds, on the anatomical side, a general tendency for these defects to be correlated with injury in the lower portion of the pre- and post-central convolutions and the parts lying beneath them, in the upper convolutions of the temporal lobe, in the supramarginal gyrus, and in the angular gyrus, respectively. The severity of the symptoms appears to vary with the depth and extent of the injury, but there is no evidence of point-to-point correspondence of physical and psychical disturbances. "There are no 'centres' for speaking, reading, writing, or other forms of behaviour comprised in the normal use of language."

Finally, in Part IV, he describes his important doctrine of "Vigilance," based on the fact that the central nervous system is capable of reacting as a whole or in part with different degrees of physiological efficiency, which varies with its vital condition. "The extent to which the activities of a particular portion of the central nervous system exhibit at any moment signs of integration and purposive adaptation indicates its vigilance." This leads up to an exceedingly interesting discussion of the theory and implications of cerebral localization, "illustrated by the facts of aphasia and kindred disorders of speech." The volume ends with a chapter on "Language and Thinking," and a final summary and conclusions set out succinctly in twenty-three short paragraphs.

In Volume II there are given detailed reports of clinical cases (gun-shot wounds of the head, etc.), which served as the empirical basis of the theory of Volume I. These reports, taken together with the descriptions of the special

psychological tests in Volume I, are invaluable and indispensable to research students in this field.

Of the numerous statements throughout this work which introduce new and challenging viewpoints in psychology, space only allows the quotation of the following: "Consciousness stands in the same relation to the vigilance of the higher centres as adapted and purposive reflexes to that of those of lower rank in the neural hierarchy. When vigilance is high, mind and body are poised in readiness to respond to any event external or internal." And again: "There is no more difficulty in understanding how an act of consciousness can affect a physiological process, than to comprehend how one reflex can control and modify another of a lower order" (Vol. I, p. 496). One feels that the metaphysical problem of the relation of mind and matter still remains unsolved. Nevertheless, Sir Henry Head, more than any other scientist, has brought us appreciably nearer its solution.

WILLIAM BROWN.

Types of Mind and Body. By E. MILLER, M.A., M.B. With 6 illustrations. Psyche Miniature Series. London: Kegan Paul, Trench, Trubner & Co., Ltd. 1926. Pp. 132. Price 2s. 6d. net.

IN this admirable little volume a condensed outline is given of recent work on the correlation between bodily constitution and reaction-type. The author follows more or less closely the investigations of Kretschmer, who has discovered an affinity between a body-build of the pyknic type and the cyclothymic or extroverted temperament on the one hand, and between a body-build of the asthenic type and the schizophrenic or introverted temperament, on the other. A study of the neurovegetative reaction fills the wide gap between the morphological and psychological, and provides an explanation for the differences in the affectivity which the two temperaments exhibit. The author suggests that the cyclothymic tends to be sympathicotonic, and the schizophrenic vagotonic.

This synthesis between the morphological, physiological, and psychological indicates directions in which investigations in relation to the biogenetic psychoses are likely to be fruitful in results. It makes it evident that the psychotic subject should be studied as a whole, and, since this is so essential, we feel that those who are commencing the study of psychiatry would find themselves well repaid by acquainting themselves with the views developed by Dr. Miller in this engagingly written book.

H. D.

Genius: Some Revaluations. By ARTHUR C. JACOBSON. New York: Greenberg, Publisher. 1926. Pp. 160. Price $2.50.

GENIUS no doubt presents problems as much as does degeneracy or criminality, but we are apt to think less, or hear less, of them in view of the glory of achievement by which they are dimmed if not obscured. Men of genius are departures from the normal in an upward direction, supermen on a higher plane than that

which suffices for the commonalty. But in not a few instances criticism emphasises mental inequalities that accompany the manifestations of genius, and in appraising the value of the latter does not hesitate to point out how the factors underlying them may seemingly act in other directions to the individual's detriment. The contention set forth by the author of this readable volume is to the effect that genius is a property (if the expression be not misunderstood) of the secondary or subconscious personality of the person concerned ; that only when inhibitions are paralysed are its creative powers set free ; that release can be accomplished through the agency of such factors as alcohol or tuberculosis, or even of the spirochæta pallida ; and that " the conditions and canons of our highly artificial civilisation are conducive to repression," self-expression is censored or smothered, and, one supposes, numerous geniuses consequently blush unseen.

It is all really very interesting, but painfully one-sided. Who is to decide when talent passes into genius ? For his thesis the author cites, it is true, such well-known cases as those of De Quincey, Keats, Edgar Allan Poe, Swinburne, Robert Louis Stevenson, Francis Thompson, yet for one of the select company he adds ten whose names, it is fair to say, awaken no respondent note of assent in the reader's mind. Was Elizabeth Barrett Browning really a genius, and Olive Schreiner ? Robert Southey and Charles Kingsley, Katherine Mansfield and Hannah More ? Or is it possible he has selected those in literature who have struggled with ill-health and called them *ipso facto* geniuses ? And what plain, straightforward, objective evidence has he adduced to prove that disease has as a fact been instrumental in releasing faculties which otherwise might never have blossomed into maturity ? Can it be that some of his writers accomplished much in spite of physical incapacities, not because of them ? Curiously enough, he has not a word to say of men of genius in the world of medicine and science. Possibly drink, tubercle, and syphilis are not such useful adjuvants to them, for some unexplained reason, as to others in the rank.

Le Rêve et la Psychanalyse. By Dr. R. Laforgue, with the collaboration of Drs. Allendy, Ed. Pichon and R. de Saussure. Introduction by Dr. Hesnard. Paris : A. Maloine. 1926. Pp. 249. Price 12 francs. This work consists of a series of essays on the psychology of dreams and analogous psychotic manifestations by various writers, each of whom guards his own opinions intact and is thus at liberty to express himself from a personal point of view. The book is not intended to furnish a schematic presentation of Freud's dream theory ; it is a more or less original work in which a number of new and interesting ideas are developed. Dr. Hesnard writes a lengthy preface in which he submits the psychoanalytic theory of dreams to a critical examination, and warns the reader against too hasty an acceptance of the new doctrines and interpretations. Altogether the book creates the impression that the assimilation of the new teaching with traditional French psychiatry will lead to some interesting developments. H. D.

L'Hygiène Mentale et Nerveuse Individuelle. By Drs. Henri Bouyer and Martin-Sisterton. Preface by Dr. Henri Claude. Paris: A. Maloine. 1926. Pp. 352.

In this volume the authors aim to apply the principles of modern psychiatry to the problem of the prevention of mental disorder. Many books have been written in regard to the prevention of physical disease, the preservation of the body from wear and tear, and the principles of healthy living, but it is only recently that the medical profession has begun to concern itself with the preservation of the mental health of the community. As the authors observe, it is not that humanity has neglected mental hygiene in past ages, but the development of its principles has until recently been almost exclusively the concern of the philosopher, moralist and teacher, rather than that of the medical profession. The mental health of the people will always be dependent in a measure on those who have the care of the young, but, in view of the considerable incidence of mental disorder in the community, mental hygiene must be as much the concern of the medical profession as physical hygiene. Thus there is room for such a textbook on this subject as the one to which this notice refers, and we have no doubt it will be found most useful by the medical student and practitioner.

H. D.

Woman. By Bernard A. Bauer. Translated by E. S. Jerdan and Norman Haire. Edited with an introduction by Norman Haire. London: Jonathan Cape, Ltd. 1926. Pp. 413. Price 25s.

We have here a frank scientific exposition of all that appertains to woman. The volume is divided into five parts. The first part deals with the physical side of sex and its functions. Herein we get a historical introduction, a description of the anatomy and physiology of generation, the development of the child from birth to the mature woman and old age, including the facts of pregnancy and labour. The second part is devoted to the psychology of woman at the various age periods. In part three, the sexual life of woman is discussed in its varying aspects; and in the fourth, the erotic life is detailed in so far as the different sensory stimuli are concerned. The final pages deal with marriage, while an appendix gives us interesting data on prostitution.

Undoubtedly the scientific facts of sex presented in such a form should be welcome, for we realise to what extent ignorance is provocative of difficulties in sexual adaptation and those mental disharmonies we term 'neuroses.' The author, however, when he treats of the more important part of his subject in the second part, fails in our opinion greatly in his task. In a dogmatic way he is descriptive but nowhere does he attempt to give us any insight into the deeper trends of woman's psychology. There seems to be a definite bias in particular directions. As the editor himself points out, "no proper grasp of the subject can be obtained without acquaintance with the teachings of psychoanalysis," and these evidently Dr. Bauer has entirely neglected. Freud is

mentioned twice but only to repudiate one or other of his conceptions. The following quotations well demonstrate the writer's prejudices. In childhood the main feminine characteristics are pointed out to be vanity and talking about other people. In adolescence there " begin those lies which are characteristic of woman " and vanity " leads to that particular stupidity which dominates woman throughout the whole of her life—subservience to fashion." " A woman doctor if she is operating and a severe hæmorrhage occurs will inevitably fail in the crisis." " During pregnancy sometimes she appears to have lost all her healthy common sense and judgment." " Woman is superficial, vain, and in later life the tendency to lying, latent in every woman, becomes more evident." " The ' dangerous age ' is really dangerous, for it destroys the last vestige of a woman's common sense." " The old woman is morose, ill-natured, mendacious and boastful (like the old maid) because she can no longer enjoy life." " Woman lives only for sex and is essentially nothing but sex." We should be sorry indeed to regard such wholesale diatribes as having that scientific value which the author gives them. Eliminating the psychological chapters, there is much that makes useful and interesting reading. C. S. R.

Epilepsie : vergleichende Pathogenese, Erscheinungen, Behandlung. By Dr. L. J. J. MUSKENS, General Secretary of the International League against Epilepsy, etc. With 52 illustrations. Berlin : Julius Springer. 1926. Pp. 395. Price M.30.

Dr. Muskens has for long been recognised among neurologists as one who has made the study of epilepsy the prominent interest of his lifework, and whose contributions to the subject have always been of value. In this fine monograph are collected some old and much new material of an experimental kind, and a great mass of clinical observations, bearing on the obscure problems both of the exact nature of the epileptic attack and of the neural sites and mechanisms concerned. As the neurologist will readily appreciate, these are precisely the aspects of the general problem that must prove of importance for the clinician and therapeutist, seeing that knowledge of the nature and pathogenesis of the ' disease ' must precede its successful treatment.

The view herein advocated and supported by experimental findings is based on the hypothesis that the simple myoclonic reflex underlies the more elaborate manifestations of what we call epilepsy, and that the myoclonic form of epilepsy is, physiologically considered, a kind of ' after-discharge.' A long and detailed section deals with the regions of the neuraxis from which myoclonic phenomena (simple and epileptic) can be elicited, and with the precise centres and tracts involved. The third part of the monograph is clinical, comprising not only a general description of the facts of observation but also an interesting chapter on the relation of epileptic phenomena to the ' psychisms,' in which varieties of loss of consciousness, epileptic equivalents, and the interconnexion of epilepsy and the psychoses and psychoneuroses are fully considered. Some

40 pages are allotted to the treatment of the condition, in which as much attention is given to questions of prophylaxis and social hygiene as to purely medicinal methods. A final chapter investigates the somewhat difficult and at any rate undecided problems of the influence of surgical intervention in epileptic cases.

Two pages at the end of the book furnish the reader with an analysis of a large number of alleged 'epilepsy cures' of a proprietary character, for which the author deserves our thanks; stripped of their secret they are revealed in most instances as containing little else than potassium bromide.

S. A. K. W.

Sex in Man and Animals. By JOHN R. BAKER, Department of Zoology, University Museum, Oxford. With a preface by Professor JULIAN S. HUXLEY. London: George Routledge and Sons, Ltd. 1926. Pp. 175. Price 7s. 6d.

WE should like to echo in this review the words of Professor Julian Huxley in his preface; the book is "written in the simplest language and presented in the most straightforward way." It deals with problems of perennial interest, some at least of which seem now to be taken up by those possessing a little knowledge and incapable of giving really deep consideration to their complexities. Questions, for instance, of the determination of sex and its artificial control exercise the minds and pens of some who, as far as may be judged, are not conversant with the facts; and it is refreshing to find a scientific author not hesitating to speak of "the sea of falsehood in which the editors of our periodical press delight that their readers should bathe."

Mr. Baker covers the ground of sex determination in a peculiarly lucid way, with an easy style that hides from the reader the difficulties he is in reality surmounting; and the cognate problems of parthenogenesis, hermaphroditism, and sex ratio are handled equally clearly. Only in the last chapter, that devoted to sex behaviour, does he leave the trodden paths of objective data for the alluring byways of conjecture. As a foundation of knowledge on which to erect theory no better work than this can be imagined; here is no facile recitation of the "undiluted nonsense" that passes for sex knowledge, but a sober review of the ascertained facts, offered for perusal by the intelligent lay reader as well as by the professional man in a modest and pleasantly impersonal garb.

Further Contributions to the Theory and Technique of Psychoanalysis. By SANDOR FERENCZI. Authorized translation from the German by JANE ISABEL SUTTIE and others. The International Psychoanalytical Library. No. 11. London: The Hogarth Press. 1927. Pp. 473. Price 28s. net.

ALL students of psychoanalysis will welcome unreservedly this literature written by an authority, who, after Freud, has perhaps done more original work on the subject than any other worker in the same field. His previous translated contributions were published in 1916 and though they only constituted a small volume, their content was and still remains of great value. Further

personal work is given us in these ninety disjointed papers (but not in chronological order) which have appeared since, mainly in the *Zeitschrift*. The contributions vary much in length—some only being a few lines long—but all are pregnant with interest and reflect the author's remarkable knowledge and intuition.

Ferenczi's special original trends have been directed to throwing analytical light derived from experience upon certain normal and pathological phenomena which have not previously been fully explained. In the field of technique, too, he has made the attempt in certain circumstances "to speed up the analytic technique by so-called 'active' measures," which, however, as is pointed out, is not a technical innovation to replace the classical Freudian technique, but only to be occasionally applied as a reinforcing adjuvant.

The contents fall under the several headings of Nosology, Technique, Sexual theory, From the Nursery, Dreams, Symbolism, Applied psychoanalysis, Medical jurisprudence and religion. A bibliography of Ferenczi's writings from 1899 to the end of 1926 concludes the volume. There is so much of value within these pages that the singling out of anything for special mention is mainly a personal reaction on the part of the reviewer. We feel, however, that the author's work on the "Disease- or patho-neuroses" is particularly important because of its direct bearing on general medicine and surgery. It seems that only by the adoption of some such conceptions will light be thrown on much that hitherto has been quite obscure. His views on tic and his correlations of them with the motor expressions of catatonia are of great interest though the hypotheses put forward are acknowledged to be constructed rather speculatively. We note that in discussing a case of hysterical hypochondria it is stated that pure hypochondria is incurable. Enlightenment is sadly needed on this ill-understood condition and even psychoanalysts deal with it only in a fragmentary way. No student of the subject can afford to neglect the contents of this volume and we must be grateful to the compiler—Dr. John Rickman—for the part he has played.

C. S. R.

Freudian Essays on Religion and Science. By CAVENDISH MOXON. Boston: Richard G. Badger: The Gorham Press. 1926. Pp. 133.

WITH one exception these eleven essays have previously appeared in various journals but they are distinctly welcome in book form. Though some amount of psychoanalytic knowledge will be helpful to their fuller appreciation, they should appeal to all who desire to widen their mental horizon. The author presents his material in a clear and interesting way and it is evident that he has thought deeply on his subjects. Any intelligent reader must certainly be stimulated to go further afield in a study of psychoanalytic discoveries. This was the writer's aim and he seems to have amply succeeded.

C. S. R.

The Significance of the Physical Constitution in Mental Disease. By F. I. WERTHEIMER and FLORENCE E. HESKETH, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital. With a preface by Lewellys F. Barker. (Medicine Monographs No. 10). Baltimore: Williams and Wilkins Co. 1926. Pp. 88. Price $2.50.

THE impetus given in recent years to the study of the whole man in cases of mental disease shows no sign of being expended. The authors of this contribution to the subject of body types and mental function have supplied us with a timely study of anthropometric methods already in vogue, which is distinctly critical of some of the claims made for them, and constructively useful in that it furnishes the clinician with a new technique which is considered to be superior. This assertion is of course not left unsupported, but is substantiated by the records of a large number of cases. The athletic, asthenic, and pyknic types of Kretschmer can be exactly differentiated by means of this new index, which establishes afresh the association of these with certain varieties of psychosis. For the sake of its interest we may cite here the authors' scheme.

$$\text{Index} = \frac{\text{Leg length} \times 10^3}{(\text{Transverse chest D}) \times (\text{sagittal chest D}) \times (\text{trunk height})} \times 100$$

where D represents diameter.

Travaux et Mémoires. By PIERRE MARIE. Tome I. Paris: Masson et Cie. 1926. Pp. 358.

THIS, the first volume of a series of reprints of certain of the works of Professor Pierre Marie, contains many articles which may be said to have become classics in neurological literature. The works here republished deal with Aphasia, Acromegaly, Spondylitis Rhizomélique, Hypertrophic Pulmonary Osteoarthopathy, Hereditary Cleido-Cranial Dysostosis and Achondroplasia.

The volume should be of great interest and value, containing as it does under one cover many of the most permanent contributions to medicine of one of the greatest of living clinicians.

Paralysie verticale du regard (Syndrome de Parinaud). By Dr. JULES DEREUX, Interne des hôpitaux de Paris. Paris: Librairie Arnette. 1926. Pp. 96.

Dr. Dereux has written an able little thesis on the vexed question of the exact site of the lesion producing paralysis of upward movement of the eyes. It contains a full summary of a large number of previously reported cases, and adds the record of personal material, clinical and pathological. He shows that the site, contrary to what is often thought definitely settled, need not be in the anterior corpora quadrigemina, but may be in their vicinity, in the regio subthalamica. So-called 'supranuclear centres' for upward movement in the corpora cannot be considered a necessary hypothesis, since a commissural system between the ocular centres of the two sides will explain the phenomena,

Dr. Dereux has brought forward evidence suggesting that this system of fibres is formed by the commissural bundle which passes dorsally over the aqueduct of Sylvius at its anterior end.

Les Vertiges. By J. LÉVY-VALENSI and E. HALPHEN. With 41 diagrams. Paris : A Maloine. 1926. Pp. 118.

This is a useful little compendium of knowledge in respect of vertigo and its varieties and causation which can be slipped into the pocket and utilised both by the bedside and at moments of studious leisure. It embodies present-day conceptions of the nature of vertiginous sensations and present-day methods of determining its origin. Diagrams unusually simple and practical explain to the reader at a glance the neural mechanisms concerned and enable him to reach a diagnosis with ease. We have not seen a better elucidation of a technique that has gradually become somewhat elaborate, and recommend the slender brochure to student and practitioner.

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